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## THE RAILWAY GAZETTE

33, TOTHILL STREET, WESTMINSTER, S.W.1.

### Record Output of Steel

THE output of steel in June, which was equal to a rate of 15,444,000 tons a year, was the highest in the history of the industry. It compared with 13,206,000 tons in June last year, and with a previous high record of 15,283,000 tons attained in April this year. For the six months to June 30, total production was 7,564,000 tons, equal to an annual rate of 15,128,000 tons. This indicates that, even allowing for the usual fall during the holiday period, production so far is running above the rates required to meet not only the original steel target for 1948 of 14 million tons, but also the revised target of 14½ million tons. Despite the high rate of steel ingot production, the continued success of the home scrap drive has resulted over the past three months in no further fall in either scrap or pig-iron stocks. Steel production during July and August will be adversely affected by holidays, but pig-iron production should be maintained at a level sufficient to enable some improvement in stocks to be made before the autumn.

### The Beginning of Co-ordination in Transport

Under the Transport Act, 1947, one of the principal objectives of the present system of State ownership of rail, road, inland waterway, dock, and hotel undertakings is to effect co-ordination and integration of the services. Despite unity of ownership since January 1, a drawback from which the various Executives under the British Transport Commission have suffered has been the fact that they have been domiciled in varying parts of London, which has not made communication as easy as otherwise it might have been. In part, we understand, this position is shortly to be remedied. The Railway Executive since its inception has had its premises at the old Great Central Hotel, now known as 222, Marylebone Road, N.W.1. We understand that the Road Transport Executive, which has been housed at St. Pancras Chambers, Euston Road, N.W.1, will move shortly into the same building. Later, the Hotels Executive, at present at Euston Station, and the Docks & Inland Waterways Executive, which is now at Dorset Square, N.W.1, will also move into the same building. This bringing together under one roof of the various Executives should make for easier intercourse and greater freedom of personal contact, which in turn should be reflected in a more ready appreciation of mutual problems.

### Workers' Control in Transport

The conference of the National Union of Railwaymen last week was marked by two important declarations. Mr. J. B. Figgins, the N.U.R. General Secretary, stated that the workers would not be satisfied with nationalisation unless they obtained an adequate share in the control and administration of the industry itself, and during the conference several speakers supported this view. The Executive was instructed to seek an interview with the Minister of Transport on the subject, and it was stated that the union would wish to have three more representatives on the British Transport Commission and equal representation on the Railway Executive. The second point of importance which emerged at the conference was made by Mr. John Benstead, who, until he became a member of the British Transport Commission, was General Secretary of the N.U.R. Mr. Benstead warned delegates that it was not possible to treat the travelling public or industry at large as some gigantic milch cow from which any level of rates and fares could be extracted. He emphasised, too, that the Commission had laboured unceasingly as a united body to implement the Transport Act as fully as possible.

### British Export Opportunities in Siam

At the present time, Siam is short of American dollars, but is earning an increasing sterling income by reason of the world demand for its principal exports of rice, tin, teak, and rubber. Information from an authoritative source shows that the country is in a position to consider undertaking the rehabilitation of its railways, and it is suggested that in view of the fact that funds in sterling are more readily available than dollars, it offers a hopeful market for British manufacturers if advantage is taken of the present position at once. Large

initial orders for capital equipment, such as railway material, might well be followed by repeat orders for years to come. Prospects of trade with Siam are improved by the good will felt in the country towards Great Britain, which is in striking and welcome contrast to the attitude of certain other Asiatic territories. Every facility has been granted since 1946 for the resumption of business in Siam by British banks and commercial houses, and satisfactory agreements have been concluded between the Siamese Government and British tin, oil, and teak interests. The foreign debt of the country, small but largely British-held, has been fully serviced and her credit is 100 per cent. The Royal State Railways of Siam are of metre gauge and have an open mileage of 2,139, of which 13 miles are electrified. Much of the main-line express traffic is worked by diesel-electric locomotives, as well as a number of trains in the Bangkok district.

\* \* \* \*

#### South African Railways Organisation in London

As briefly recorded in our last week's issue, subsequent to the establishment of the Tourist Development Corporation of South Africa, the South African Railways & Harbours Administration has reorganised its department at South Africa House, London, so that it becomes a purely railway organisation. Mr. J. R. Naisby, hitherto Director. Publicity & Travel Bureau, has been re-designated Commercial Representative. South African Railways, South Africa House, London, and the organisation will function under the Chief Commercial & Industrial Manager, S.A.R., Johannesburg. The change has been made because of the growth of South African Railways interests in Great Britain, and because the Tourist Corporation, it is expected, will open an office in London in due course, which will become the headquarters of South African national tourist publicity. The organisation under Mr. Naisby (of whom a portrait and biography appear on another page) will continue to publicise the transport facilities of the S.A.R.—railways, road motor services, harbours and airways—and to furnish non-technical information, as well as to issue tickets for travel in the Union. Technical matters will continue to be dealt with by the Railways Advisory Engineer at South Africa House.

\* \* \* \*

#### Road Haulage Emergency Scheme to End

The Road Haulage Association has been informed by the Minister of Transport that he does not propose to continue after August 16 the scheme for an emergency reserve of vehicles. Government traffic will continue to be allocated at the recognised commercial rates through the Road Haulage organisation until the end of September, after which the R.H.O. will cease to function, and Government departments will arrange direct with hauliers. In notifying the R.H.A. of these changes, the Minister has expressed appreciation of the help which the Association has given in making the emergency scheme a success since its inception in 1946. Under the scheme, a total of 70,000 tons capacity was available from hauliers, which was more than sufficient to meet all the calls made on the R.H.A. A good deal of the success was due to the voluntary work of the area contact officers, area transport committees and area transport officers, as well as of the National Transport Officer (Mr. Roger Sewill) and his deputy (Mr. F. L. Sabatini).

\* \* \* \*

#### Planning London's Railways

The County of London Plan, which was published in 1943 and prepared in association with Professor Abercrombie, contained the suggestion that, as the railways presented a number of difficult features which merited serious attention and detailed consideration, a specially-appointed investigating body should be set up before any detailed scheme for railways was propounded. In February, 1944, after consultation with the Minister of Town & Country Planning, the Minister of War Transport appointed the Railway (London Plan) Committee, to consider the plan's railway proposals, as well as any alternatives or modifications that were suggested by the railway com-

panies. The Committee submitted a report in May, 1946, in which it was proposed to build new suburban railways of main-line size and in deep-level tunnels, on the assumption that the three cross-river railway bridges at Charing Cross, Cannon Street and Blackfriars eventually would be removed. The final report, published last week, examines the proposals for railway terminals north of the Thames, excluding those of the Southern Region, and for handling London's freight traffic. Among the proposals made in the report are a two-level station at Liverpool Street and the construction of automatic tube railways for goods traffic; further details are given elsewhere in this issue.

\* \* \* \*

#### Report on 1947 Tourist Trade

Money spent in Great Britain by visitors from America in 1947 exceeded in value the export of any single manufactured commodity to the United States, and something like 38 per cent. of the total tourist income of £30 million came from the dollar area of Canada and the U.S.A. Transport income from fares on tourist account was estimated at rather more than £10 million. Though the future is difficult to predict, there is evidence of substantial improvement in this trade, and foreign visitors this year were 81 per cent. of the average for the immediate pre-war years. Tourists from the Commonwealth are still few in number, because of difficulties of transport, but visitors from France, Holland, and Belgium were more numerous than in any previous year for which records exist. The original estimate of the British Travel Association, whose annual report is referred to in our news pages this week, was 300,000 for the year, whereas 390,000 actually arrived, though special events such as the Royal Wedding and the Edinburgh Festival no doubt contributed materially to the increased figure. Of the 500,000 visitors expected in 1948, nearly a quarter should come from North America, paying for their visit in much-needed dollars.

\* \* \* \*

#### Manchester-Sheffield Electrification Progress

When visiting Sheffield last week, as reported briefly in our July 9 issue, Sir Cyril Hurcomb, Chairman of the British Transport Commission, gave December, 1952, as the date by which it was hoped to have completed all four stages of the Manchester—Sheffield electrification scheme. He quoted some advantages of the 1,500-V. d.c. overhead supply system as compared with a third or fourth rail at a lower voltage, saying that there was a very large saving in steelwork costs. Only 25 tons per single track-mile were required, as against some 100 tons for the third rail or double that weight if the fourth rail was employed. Sir Cyril Hurcomb said that the whole scheme comprised some 330 single track-miles. About 93 single track-miles of foundations for the overhead equipment and 50 miles of overhead structures had now been completed, and in addition 12 miles of posts and brackets for high-tension and pilot cables had been installed. Electric locomotives will be used for all except local services between Manchester, Hadfield, and Glossop, for which eight three-coach multiple-unit trains are to be built. The first of the 85 electric locomotives has been loaned to the Netherlands Railways, and some details of its performance were given in our December 5, 1947, issue.

\* \* \* \*

#### New Control Circuit for Electric Vehicles

A new method of motor control which is being applied at present to battery-driven electric trucks, but is claimed to be suitable also for heavier traction purposes, was demonstrated last week by Lansing Bagnall Limited. It provides continuous speed control without resistances, or the notches associated with resistance controllers; and regenerative charging of the batteries, with retardation, when the accelerator pedal is released. In the vehicles demonstrated, the specially-wound 48-V. d.c. motor was coupled to an a.c. motor that could be connected to an ordinary mains plug for driving the d.c. machine as a generator to charge the batteries at night. Details of the circuit have not yet been made known, but it was noted that the variable speed and regenerating characteristics were provided in the traction motor itself, there being no

additional rotary machine such as is used in the Metadyne system, for example. Considerable economies in battery operation are claimed as a result of regeneration, and the fact that there is no need to have a separate charging board for use overnight. A compact relay box is the only control apparatus required. The motor is started off load, a magnetic clutch taking up the drive when 1,000 r.p.m. is reached.

#### Servo-Motors for Locomotive Regulators

Few engineers would deny that most existing designs of locomotive regulator handles in this country could be considerably improved, so as to give a more convenient location in the cab assembly, and better behaviour in service. Yet such "improvements" are only to be realised at the cost of increased complication, or by the introduction of some device which may bring fresh troubles with it. The regulator handle ought to be as easy to reach as the brake valve; though frequently it is not, due to the traditional practice of arranging the regulator stuffing-box on the firebox backplate. A further drawback in several types of regulator is the tendency for the valve to close gradually during running as a result of the vibrations caused by the movement of the engine. Indeed, on one famous British railway, the drivers used to carry a selection of wooden wedges with them, to hold the regulator handle open at the required position. A new American device, however, makes use of compressed air from the brake system to operate a small servo-motor which is directly coupled to a regulator housed in the superheater header, and gives a very fine range of control. In shunting engines a foot-control pedal is installed in addition, so that the driver can "step on the throttle" as if it were the accelerator of a car; both hands are then free to operate reversing gear and brake.

#### Shorter Trains and More of Them

**C**RITICISM of British Railways timetables has been directed chiefly at indifferent cross-country services and bad connections, and the apparent lack of co-operation in the arrangement of train times over the Regions whose main lines run nearly parallel, and serve many of the same intermediate towns. Such criticism, however, has been and still is frequent enough to indicate a desire for a real revision of passenger services, as soon as the need to cater primarily for weekend and holiday traffic becomes less pressing, since the existing service, whether we regard it as a patch-up on the emergency timetables of the war, or as a partial resumption of pre-war facilities at reduced speed, cannot form a satisfactory basis for reconstruction in the changed conditions of today. Some of these questions were discussed in the review of the summer timetables in our June 11 issue.

There seems, too, to be a growing doubt, in responsible quarters, to which we drew attention in our April 2 issue, as to the wisdom of running very heavy passenger trains up and down the country, at infrequent and irregular intervals, and employing an increasing number of extremely powerful engines, which inevitably must be used at times on trains which do not require them. It is possible that one of the results of the locomotive exchanges, now almost completed, may be a preference for a less powerful machine, cheaper to operate and maintain, but only capable of hauling a lighter load. The old argument that the huge reserve of power possessed by the biggest engines enables lost time to be regained, and improves punctuality, is somewhat fallacious, as the occupation of the line by other traffic often gives a late-running express no opportunity to get back to schedule, even where recovery of time is permissible; and delays are much more costly when loads are heavy. At some termini the position is becoming serious already, as groups of huge trains, following one another closely, overtax the capacity of the stations, and cause delays which irritate the public and may soon force consideration of the question of providing more terminal space.

These and other factors lead us to the view that timetable reconstruction in Great Britain should aim, on routes where there is a constant heavy flow of business, at a spreadover of passenger traffic by the running, all day long, of a frequent and regular service of fast passenger trains of moderate weight—corridor block-trains with restaurant or buffet car, but with

as few through portions or through carriages as possible—so as to reduce shunting movements and facilitate a quick turn-round. These trains should be timed at moderate speed and call, in each direction, at the more important towns or junctions on the route—frequency of service thus compensating for the loss of high-speed trains and non-stop runs. They would, of course, be fed by semi-fasts, serving stations of less importance, but, as regards running speed, timed almost as fast as the principal expresses, so that passenger train speeds would be as nearly uniform as is consistent with the provision of a satisfactory service.

We realise that many cogent arguments will be advanced immediately against so disturbing a proposal—such as the immense labour of timetable reconstruction, the loss of certain services long familiar to and popular with the travelling public, and (most important of all) the increase in the number of passenger trains on the line and the extra cost of personnel. Timetable revision is, however, necessary, and has been accomplished very successfully abroad, and we believe that improved punctuality, and the simplification of passenger train operating, would in itself effect great economies and result in a far better use of engines, carriages, and men. The public would soon accustom itself to, and welcome, the new services, and fewer seasonal changes would be required in the timetables, so that the cost of preparing and printing the books might be reduced materially. The present is an ideal time for putting such a scheme into practice, with one central executive to direct the policy on every Region, and before the public settles down to the services under nationalisation.

It is not suggested, of course, that reconstruction on an extensive scale would be necessary on all Regions. The Western, for example, would be able to build up on the fixed-hour departures introduced by the G.W.R. some twenty years ago. More active co-operation with Euston would be necessary in the arrangement of London and Birmingham services, which should run at least hourly by one or other route, though here (as in other cases where commercial business is heavy at certain hours) trains by both routes might have to leave simultaneously in the morning and evening, although the long gaps which now exist in the service would have been filled up. The Southern Region's regular express electrics already spread the traffic as much as is practicable, and the Southampton and Bournemouth trains—now running almost hourly from 8.30 a.m. to 7.30 p.m., with semi-fasts at the odd expresses at the even hours, compared with the five or six irregular express departures of London & South Western days—achieve the same result. On the main lines out of Marylebone and St. Pancras, little would be needed beyond a greater regard to the times of trains on parallel routes, and such accelerations and spacing as is necessary to give towns which depended entirely on the old Great Central and Midland routes a reasonable equivalent to their pre-war service.

It is, however, at Kings Cross and Euston, the London termini which suffer most from the closely-spaced arrivals and departures of very heavy trains, that the spread-over of long distance passenger business would be so valuable. The old practice of Great Northern days, when express departures from Kings Cross were grouped around 10 a.m., 2, and 6 p.m., leaving lengthy intervals clear for freight working, has long been abandoned, and there is little doubt that an hourly service all day long to Newcastle, calling at Peterborough or Grantham, York, and Darlington, on a 5 or 5½-hr. schedule, would load satisfactorily and would not be beyond the carrying capacity of the line, especially when we recall the three high-speed trains which used to run down the main line at 4, 5.30, and 7.10 p.m., and the dislocation they must have caused. Five or six of these Newcastle trains would, no doubt, go forward to Berwick and Edinburgh, probably on an 8-hr. schedule to the latter, contrasting with the five day services to Edinburgh now given at 9.50, 10, 10.5, and 11.15 a.m. and 1 p.m. from London; and three or four of the trains terminating at Newcastle would be routed *via* Stockton and Sunderland.

North of York, through cross-country trains to Newcastle from Bristol and Birmingham, and from Liverpool and Manchester, would provide the necessary additional services over the North Eastern Region's main line, and, south of York, there would be express departures from Kings Cross for Doncaster, Hull, and Leeds. These would run separately from the Newcastle and North services, and would be relieved of some



of their West Riding business by Marylebone and Bradford trains, serving Huddersfield and Halifax. The schedule to Leeds would be around 3½ hr., with Doncaster and Wakefield stops, and Leeds trains would be fed at Doncaster by semi-fasts running between Kings Cross and York.

From Euston, Preston probably would be the common goal of the regular expresses to the North, some going forward to Carlisle and Glasgow, some to Blackpool, and some becoming semi-fast trains north of Preston to serve the Furness and Lake districts. Euston and Manchester trains would run *via* Stoke and be arranged to alternate with services over the old Midland Division; and Liverpool trains would serve North Wales from Crewe. Rugby, with improved cross-country connections from Peterborough, and Crewe, would be common stops (Rugby, Stoke, and Macclesfield in the case of Manchester trains); and Warrington and Wigan might be served by alternate trains to the North. Schedules would be about 4 hr. to Manchester and Liverpool, 4½ hr. to Preston, and 8½ hr. to Glasgow. Birmingham, of course, would have its own through trains to Manchester and Liverpool, fed at Stafford by a few semi-fasts from Euston serving main-line stations of secondary importance, as well as at least two day services to Scotland; and Lancashire would have its own through trains to Glasgow and Edinburgh, over and above the expresses from London. Similarly, Leeds would retain its own through morning service to Edinburgh, which would pass over the North Eastern Region's main line from York well ahead of the first day service from Kings Cross.

This brief outline of the probable effect of such a timetable reconstruction on two heavily-occupied main lines ignores several important factors, for which a detailed scheme would provide—such, for instance, as the West and North trains *via* the Severn Tunnel and *via* Gloucester and Birmingham; and the traffic for Scotland which originated on the old Midland main line north of St. Pancras. It does not deal with the night sleeping car trains, which still probably would require to carry heavier loads than the regular day services, and might well provide work for the existing studs of very powerful engines though the day expresses would begin early and finish late enough to absorb a certain amount of traffic now passing by night. There is the possibility, too, of the diversion of some of the North to South traffic away from London termini altogether by greater use of certain cross-country branches and "avoiding London" routes.

### The Goswick Accident

THE serious accident at Goswick on October 26, 1947, the report on which, by Colonel A. C. Trench and Lt.-Colonel G. R. S. Wilson, is summarised in this issue, involved several contributory factors, but a principal one was the mistake that has figured many times in accidents and narrow escapes therefrom. This was, assuming that because the home signal is off a clear run through is assured. This incorrect acceptance of a clear home signal, which a signalman, even in those cases where his rules prohibit it, may have pulled off too soon, we cannot help thinking, is more common than many suppose, not a few drivers failing clearly to understand that Rule 39 (a) is not an instruction to them at all, but one issued to the signalman, and which may be badly carried out.

In this case the signalman in fact would have been justified by the rules in expecting the train to obey the distant signal and therefore to be approaching under control, and able to act on the signals, although already pulled off for a diverging route. He was, however, on his own initiative, applying Rule 39 (a), but he misjudged the speed of the train and its distance from the home signal. The distant was not seen at all and the clear home signal was taken to mean that all was right for the direct route, a very serious operating blunder. We do not know who is responsible for training drivers in the meaning of and working of signals, but certainly they cannot too fully impress on them that if a distant signal is seen to be against them, or, still more, has been missed altogether, they should bring their train at once under full control and not be satisfied until every signal is seen to be in their favour throughout the area over which such distant signal reads, right up to the advanced starting, where one exists.

It was inevitable that such a serious derailment as this

should raise anew the question of automatic train control, and direct attention to the working of signals for slow speed diversions and the issue of notices covering such of them as are specially imposed in consequence of engineering works. Too much care cannot be taken to ensure that they are well printed or, when necessary, typed, clearly displayed in a good light at the sheds and depots and well separated. Some unsatisfactory features of the arrangements in force before the accident were brought out and it is to be hoped that the recommendations in the report will receive prompt attention.

Even with the best arrangements, however, a notice may go unseen or be forgotten, while the necessity for a diversion may arise at any time, with no possibility of a notice being issued to cover it. Nothing can alter the fundamental fact, stressed again in the report, that the signals must be regarded as the driver's first guide and that we must start with the assumption that they will be obeyed. It is prudent, however, to take such measures as are reasonably practicable to provide against mistakes or carelessness. The most serious of these is the missing or misreading of an adverse distant signal by a fast train. Here automatic train control can come to our aid, while the delayed clearing of signals can provide some protection against the results of misreading the subsequent stop signals. It was emphasised, however, by the former railways, when it was put to them on an earlier occasion, that traffic conditions do not allow of this being carried out everywhere for ordinary movements without giving rise at times to considerable delays, although out-of-course diversions now are being so dealt with, at least on some Regions.

The old-fashioned signal engineers would have shaken their heads over this and similar cases, declaring it all came from not having splitting home signals arranged the same as the starting signals, so that the driver on sighting the clear home signal could not get the wrong impression that he was approaching an ordinary through station, but received a diverging route aspect at the first stop signal. Some railways, such as the London, Chatham & Dover, carried out this principle very strictly years ago, and the remains of the signal dolls then in use can even be seen still at some stations. Some of our Continental friends might be inclined to say it came from not having a distant signal for the starting signal situated at the home and invariably kept against any train which has not a clear run through on the direct route. Something can be said for and against all these things, but argue about them as we may, nothing in the long run is going with certainty to save us if carelessness is present on the footplate or in the signal box. Mechanisation is no substitute for the conscientious performance of responsible duties, although it may help a man to avoid the worst consequences of a genuine error of judgment or momentary forgetfulness.

### Co-operation in Transport

IN our last week's issue a brief account was given of the visit to the Eastern Region of British Railways by Sir Cyril Hurcomb, Chairman of the British Transport Commission. Among the centres visited was Doncaster, where he spoke on the value of co-operation between all grades in transport. Some daily paper accounts of Sir Cyril Hurcomb's speech were so abbreviated as to make it difficult to understand the purport of his remarks, and even to create the impression that he was advocating an extension of workers' control. The following notes give the gist of his statement:—

Sir Cyril Hurcomb said that "both the Transport Commission and the Railway Executive are anxious to make the fullest use of the practical knowledge of railwaymen who could play a really co-operative part in the industry." He appealed to the representatives on the Local Departmental Committees and other similar bodies to do everything possible to increase the usefulness of those Committees, and said that if that were done, the staff would find every opportunity of contributing to discussions on efficiency in the operation of the Commission's services. He said that "he was very anxious that full information about the progress of nationalised transport should be given to members of staff right along the line, and about developments, particularly in places where the developments affected them." He endorsed what Mr. C. K. Bird, the Chief Regional Officer, had said, that at these Departmental Com-



mittee meetings and similar meetings it was the desire of the management that the men should feel that they were sitting at a round table and were not lined up on opposing sides.

"In the last six months," he continued, "I have visited, with members of the Railway Executive and the Chief Regional Officers, railway centres and workshops in many parts of the country so as to study for myself the conditions under which the public travel and our staffs operate: I have found everywhere an excellent spirit of endeavour extending from the centres of administration right through to the men on the footplate, on the line, and in the workshops. They are united in their desire to serve the public.

"The Commission has various statutory duties under the recent Act in relation to staff: duties which, even apart from any statutory direction, we should have regarded as primary. All our Executives, I am sure, take the same view. Progress has already been made. The railway Executive has established a system-wide Joint Advisory Council, consisting of five representatives of the Railway Executive and five representatives of the unions, to review the standards of accommodation, such as mess-rooms, and other similar questions relating to welfare and the amenities provided for the staff.

"We have already started in the Commission a survey of the educational and training facilities which are available to employees under existing schemes. This survey will cover not only the railways, but existing schemes within the sphere of all the Executives, road transport as well as docks. It is being conducted under the capable and experienced direction of my valued colleague, Mr. Benstead. As part, but only as part of the survey, we shall, of course, have a look at the useful arrangements for routine and vocational training which the railways have long regarded as an essential part of their work.

"As soon as the existing arrangements have been examined and ideas begin to take shape, I assure you that we shall at once proceed to consult the staff and ascertain their views in this matter—one in which they are so well able to contribute from their long and detailed experience."

### Mechanical Handling Equipment

**S**PEAKING at a luncheon at Olympia, London, on the opening day of the Mechanical Handling Exhibition and conference, Sir Stafford Cripps said that much had been done during the past half-year to close our payments gap with the Western Hemisphere, but, while we had no reason to be ashamed of our achievements in production and exports, there remained still a substantial gap which it must be our foremost task to eliminate in the next few years. The problem did not end there, however, because merely to pay our way with imports at their present level, difficult though this certainly would be to accomplish, would leave us with a standard of living no better than that enjoyed today. Our first major task must be to ensure that 100 per cent. of our imports was paid for by visible and invisible exports, and this called for a higher production efficiency than anything to our credit as yet. The key factor must be the output per hour per worker, and more and more must that output depend on the quality of the equipment provided in our works.

Another speaker, Sir Frederick Bain, President of the Federation of British Industries, said that, though it was not generally known abroad, since the war the industries of this country, particularly those unfettered, had done more than any other country in the world. At the present time, also, production was only a part of the general plan of recovery. Hitherto, overseas markets had been willing to take almost anything, but now we must produce the right thing of the right quality and at the right price. There remained many things to be done which only the Government could do, and industry must be given a fair chance.

For years the railways of this country have been alive to the importance of mechanical handling as a means of ensuring efficient service. This problem is a complex one, however, admitting of no single solution, because no two depots are alike in design or as regards local conditions. One of the papers read at the conference was by Mr. David Blee, Member of the Railway Executive, who was Chief Goods Manager of the former G.W.R., and is, therefore, very well qualified to speak on mechanical handling in relation to railway work.

In his paper, which will be dealt with more fully in a future issue, Mr. Blee said that, fundamentally, the problem of traffic movement at large railway sheds resolved itself into the possibility of eliminating walking time and/or increasing the load per journey and the speed of movement over platforms, bearing in mind that nearly half the manpower effort is in returning to loading points with empty platform trucks. Mr. Blee anticipates that in future goods shed reconstruction schemes the conveyor system will be introduced wherever possible, and that almost unlimited scope exists for the unit load system as a means of eliminating the handling of individual packages.

### Locomotive Coal Consumption

**A**T the foot of page 27 of No. 4 of the series of *Transport Statistics*, issued by the British Transport Commission, there is a table headed "Locomotive Coal Consumption." The table is of more consequence than its humble position and modest size appear to indicate. It shows that, during the four weeks ended April 18, British Railways burned 1,031,588 tons of locomotive coal in working passenger and freight steam trains. Consumption per engine-mile was 65.32 lb., 2.74 per cent. below the figure for April, 1947, but 24 per cent. above the 52.5 lb. used in 1938. After making allowance for the larger proportion of coaching train-miles to the total train-mileage before the war, and for heavier freight train loads, the increased user of fuel points to the need for three remedies, namely, keeping locomotives in good order, training firemen carefully, and, above all, improving the quality of coal supplied by the National Coal Board at ransom prices.

The records of rolling stock repairs show that the number of serviceable locomotives in April was nearly 3 per cent. larger than the available number a year before. The enlistment of recruits for the grades of drivers, firemen, and cleaners has been proceeding at the rate of over 1,000 a month, and that should add to the opportunities for instructing running staff in the proper methods of carrying out their duties. It remains for the department responsible for purchasing fuel to press the National Coal Board to deliver coal worth the price paid for it. If effective action is taken in all three directions, we may hope to see a return to the pre-war level of consumption, which declined slowly from 54.8 lb. per engine-mile in 1921 to 52.37 lb. in 1934 and was then slightly higher until the war upset normal conditions.

A decrease of 4 per cent. in coal consumption per engine-mile over the period from 1921 to 1938 is disappointing when we recall the efforts of our mechanical engineers to improve locomotive design after the 1923 amalgamation. During the same interval of years, the average freight-train load was constant at 121 or 122 tons, and freight-train speed advanced by only 4 per cent. from 8.8 miles an hour to 9.2. The changes wrought by the U.S.A. railways are impressive in comparison. The great differences in the tractive power of American locomotives rule out the engine-mile as a unit for measuring fuel user in the States. The railways go by the quantity of fuel used per 1,000 gross ton-miles, including locomotives and tenders, and, in calculating the amount, convert coal, oil, electricity, and other fuels to a coal tonnage basis. Between 1921 and 1947 this statistic fell from 162 lb. to 114 lb. of coal, while the net train load grew from 651 short tons to 1,146 and freight-train speed quickened from 11.5 miles an hour to 16. Expressed in percentages, fuel consumption went down 29 per cent., and yet a 76 per cent. heavier train travelled 39 per cent. faster.

But for these excellent operating results, the U.S.A. railways would have been in a desperate financial state. In a normal year they buy 23 per cent. of the bituminous coal output in the States and 19 per cent. of the fuel oil produced there. A statement prepared annually by the Association of American Railroads shows that in 1947 railway locomotives used the equivalent of 149,000,000 tons of coal. Freight-train engines burned 96,000,000 tons, passenger-train engines 30,000,000 tons, and shunting engines took the rest. The bill for all this fuel exceeds \$550,000,000 a year, more than one third of the total sum spent by the railways on the direct purchase of materials and supplies of all kinds. In America, as in Great Britain, there seems to be no end to increases in the price of coal, and each rise emphasises the need for economy in its use.

## LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

### Traffic Conditions in Austria

38, Upfield, Croydon,  
Surrey. June 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I read with interest the article on page 659 of your issue of June 4 dealing with present-day railway conditions in Austria, having been stationed until recently at Villach with the British Army of occupation in connection with military railway work.

The electrification of the Villach—Spittal section, which it had originally been hoped to complete by June 30, 1948, cannot now be ready until the Spring of 1949 at the earliest, and completion may be delayed even further if certain materials, notably gas piping for the support of the overhead catenary and contact lines, do not become available in the near future.

The Villach—Spittal section is not a part of the Salzburg—Innsbruck main line, but forms part of the route between Salzburg and Klagenfurt. The only International passenger traffic over this route at present is a daily through coach in each direction between Paris and Belgrade.

Yours faithfully,  
W. E. BURKE

### Sir Sam Fay on State Railways

34, Barnes End,  
New Malden, Surrey. June 7

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Now that railway nationalisation is an accomplished fact, it may be of interest to recall an article on State railways contributed to the *South Western Gazette* in 1887 by Sir Sam (then Mr.) Fay when he was an officer of the L.S.W.R. He wrote that: "the statesman who is fortunate enough to carry such a change into effect (nationalisation of the railways) will bear a name greater in history than the founder of the penny post, who, by the way, was a strong advocate of State railways." He thought that when the State owned the railways, we should look back to the days of the companies with the affection that we had for a pioneer undertaking like the old East India Company, whose work had been carried on by the efficient Indian Civil Service.

Sir Sam Fay must be well pleased that Sir Eustace Missenden, who shares many of his progressive ideas, and who, like himself, graduated in the service of a constituent company of the Southern group, now holds high office in the "British Railways" which he advocated so long ago.

Yours faithfully,  
B. G. WILSON

### The 2-6-4 Tank Engine

Chipstead, Surrey.  
July 7

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The re-introduction of the 2-6-4 type passenger tank engine on the Southern Region after a lapse of 21 years is a matter of more than ordinary interest. The first of Mr. Maunsell's design, "K" class 2-6-4 No. 790, appeared in 1917, and after a period of eight years, during which this fine engine gave every satisfaction, a further 19, Nos. 791-809, were constructed in 1925-26 for the Eastern and Central Sections of the Southern Railway; also one three-cylinder variant, "K" class No. 890. From the names given to them, they were known popularly as the "River" class.

As a result of the Sevenoaks accident in 1927, in which a number of coaches were telescoped following on the derailment of engine No. 800, the whole of the class was withdrawn from service and converted to 2-6-0 type tender engines.

Notwithstanding that one of the "K" class and the "K" No. 890 rode in a perfectly normal manner when tested by the Ministry of Transport on a section of the L.N.E.R., the clamour of the lay press was not abated and so public confidence was not restored, strong objection being raised to the further use of the "Rolling Rivers" as they were then termed.

During the years 1931-36, some more of the 2-6-4 type tank engines were built by Mr. Maunsell, i.e., 15 three-cylinder engines, class "W." They were virtually a reproduction of the "K" class, but had 5-ft. 6-in. wheels instead of 6 ft. dia. They were intended specially for the cross-London freight service between northern and southern marshalling yards, a

difficult duty which they have performed with every satisfaction. They were accepted for running with the proviso that they were not to be used in passenger service, a condition which the Motive Power Department has observed rigidly.

No such qualms regarding the suitability of the type for passenger train working were evident when the L.M.S.R. eventually built both two- and three-cylinder tank engines with the 2-6-4 wheel arrangement. Under nationalisation there is no hesitation in transferring such engines to the Southern Region for trial. The London Midland Region two-cylinder "4P" class with taper boiler is not only very similar in appearance to the "K" and "W" classes, but the dimensions and weights closely approximate to them.

Taking the opportunity presented by this recent transfer, my object in calling attention to past events is to admonish those writers and historians who persist in commenting adversely on the type first adopted by Mr. Maunsell as a passenger engine. After the lapse of time, and with subsequent developments, it is now clearer than ever that there was nothing basically wrong with his "K" class; it was just unfortunate in appearing too soon.

The ban on the "W" class for passenger working now appears to be no longer tenable. It is probable that these engines are fully engaged on freight service, but that is no reason why they should not be reclassified as mixed traffic and made available for passenger duties if required.

Yours faithfully,  
H. HOLCROFT

### Out of Gauge

British Military Administration, Eritrea,  
Eritrean Railways & Ropeway,  
General Manager's Office,  
P.O. Box 218, Asmara. July 1

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I am hastily writing to Messrs. Beyer Peacock for their publication "Beyer-Garratt Articulated Locomotives," and much looking forward to seeing particulars of the 13-ft. 6-in. gauge engine referred to in your issue of May 21. Quelle machine!

Yours truly,  
O. P. C. COLLIER,  
Major, R.E., General Manager

### Diesel v. Steam Locomotives

20, Nelson Road,  
Clacton-on-Sea. June 29

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—You have recently published two letters from ardent admirers of the steam locomotive in which the diesel-electric locomotive is condemned mainly on account of apparent inability to raise sufficient steam for car heating (by Mr. Russell Bartholomew in your March 19 issue and also for a variety of vague reasons by Mr. Roger Boland in your June 18 issue).

Any attempt to establish the superiority of one form of traction over another must be supported by all the evidence pertaining to the costs, performance, and length of life of both, and then the answer will only apply to one set of conditions, not to the particular service operated.

The diesel locomotive is in its infancy; the steam locomotive has a century and a quarter of development behind it. Stephenson's *Rocket* gave no warmth or protection to its crew, let alone a supply of steam for the passengers. However, I do not try to excuse the diesel locomotive for such deficiencies, for they do exist (one has friends who might have kept warmer had they not travelled by the 2.15 p.m. St. Pancras to Derby during the early Spring of this year), but surely a sense of proportion must be kept and acknowledgment made to the potential, but, as yet, unutilised properties of the oil engine. In this matter of train heating, in a short while without doubt the locomotive engineer will have devised a practical and compact exhaust-heated boiler, so that the already most thermally efficient form of motive power can also provide this service at no extra cost.

As I stated above, all the evidence must be presented, and to this end a number of papers have been read. The only general conclusions which can be accepted yet, however, are that, where high utilisation is needed, or where there is a shortage of good water or where oil is more readily obtainable than coal, the diesel locomotive can be operated to greater economic advantage than the steam locomotive. But the converse is not necessarily true, and in the long run such factors as smoke and dirt may decide the issue.

It was ironical that in the same issue in which you printed Mr. Boland's words: "In America it has been shown that

steam locomotives are more economical, haul more ton-miles per hour, and run a greater mileage between failures than diesels" and other unwarranted generalisations, you also printed a picture of the last Alco steam locomotive in current production.

Believe me, Sir, I share the fascination in watching the motion of a big Pacific, and delight in all those other sights and sounds so well beloved by railway enthusiasts, but inefficiency must give way in these hard and practical times, and, sad though it may seem to hear merely a rumble accompanied by a pneumatic moan, if it pays, it has come to stay.

So L.M.R. diesel locomotive No. 10000 was built, and has already, within 12 months of conception, been running regularly a higher weekly mileage than any British steam locomotive. This diesel was built as an experiment for trial in Britain, but I consider it of greater importance that, in such a way as this, the British diesel engine and locomotive industries can exhibit their products under service conditions to foreign buyers, who are already being tempted to look away from their previous suppliers to America.

Therefore, whether the internal combustion engine locomotive is the answer for railway haulage in this country or not, let the Railway Executive encourage trials of diesel and gas turbine; then, while the U.S.A. may be committed by standardisation, this country, profiting by American experience, can develop the most efficient combination of prime mover transmission and mechanical parts to regain for Britain her lead in efficient locomotive engineering.

Yours truly,

J. A. BENNETT-POWELL

## Why Not Post Office Red?

Stockport, Cheshire. June 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I would like, albeit somewhat belatedly, to refer to some of the views expressed in the article entitled "Why Not Post Office Red" which appeared in the May 28 issue of your journal.

You state that the scheme whereby a number of attractively attired experimental trains are to enlighten the drab austerity of our present lines leaves you quite cold. No doubt such frigidity of sentiment is inseparable from a purely technical outlook, although sight should never be lost of the fact that railwaymen and the public they serve are creatures of flesh and blood who are capable of laughter, depression, and enthusiasm.

This brings me to the next point. I do not think you are wise to speak disparagingly of "railway fans" and "locomotive spotters," quite apart from the fact that these people represent the main support of your well-known associated contemporary, *The Railway Magazine*; for enthusiasm is of the very greatest importance; surely, so far as the travelling public is concerned, enhanced interest in railway matters can only lead to a better patronage of our train services. In particular, it must be agreed, I think, that, whatever shortcomings they may have had, the blue streamliners of the former L.N.E.R. and its green and cream (or was it "spilt milk"?) tourist stock definitely attracted the public.

And so far as enthusiasm amongst the railway staff is concerned, there lies the secret of that increased efficiency which, as you say, will alone count in the long run. In the old days, railwaymen were proud of their calling, and with reason. Today they are not, and it is mainly on account of the sorry state in which the railways at present find themselves. Efficiency will not come until there is enthusiasm; can enthusiasm be restored before there is a return to real efficiency, and a vicious circle is thereby avoided? I will not hazard a reply to this question, but if one scintilla of pride can thereby be restored to even a small section of railwaymen, then the cost (a relatively small one, surely?) of the experimental liveries, and of something a little less terrible than plain post office red or black, will have been well justified.

This is not for one moment to dispute the fact that cleanliness is of even greater moment than any particular livery. A spotlessly clean engine in black (provided only it be lined) is infinitely more alluring than a grimy machine, however attractive its hue.

It is agreed that the final decision on the colour scheme to be adopted must rest with the Railway Executive, but is that any reason why public preference should not be ascertained, and catered for, if other things are found to be equal? This quite apart from the publicity value already referred to.

I cannot decide whether you are really serious when you advocate Post Office Red as the ideal colour for express loco-

motives under public ownership. It is a view so often reiterated that such sometimes appears to be the case; at other times—as, for instance, when you suggest a change of livery coincident with a change of government—the suggestion seems to be offered in a lighter vein. Personally, I can imagine few possibilities more ghastly, and only trust that your suggestion will not be taken at its face value.

May I conclude with two brief recommendations of my own? First, that lettering of rolling stock be abolished altogether, as unnecessary and unlovely. A small coat of arms could be included if desired. And secondly that, in answering telephone calls and for telegraphic, etc., purposes, the one word "Railways" is adequate to indicate the identity of the mighty National Transport Organisation's Railway Executive.

Yours faithfully,

MODERN RAILWAYMAN

## Transport Research Organisation

Little Gaynes Lane,

Uppminster, Essex. July 10

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The announcement, in your issue of July 9, of the setting up by the British Transport Commission of a committee to suggest the organisation of the commission's research work is welcome news.

The booking office at Stratford Station, in the Railway Executive's Eastern Region, is a brilliant example of the value of research. The collaboration between the Executive's Passenger Research Department and the architects in the design and equipment of an ideal booking office has, at one stroke, swept away the hidebound traditions of a century. The commission is to be congratulated on its obvious intention to extend the research that leads to such progress.

Yours faithfully,

F. BERNARD POOLEY,

A.R.I.B.A., A.M.T.P.I., A.M.I.S.T.R.U.E.

## Reservations in Three-a-side Stock

Cheshire. July 7

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—British Railways give considerable publicity to the effect of rolling stock shortages on the services they are at present able to offer, but a recent experience of mine prompts one to ask whether the best use is being made of the stock available.

When making a journey from the South of England to Liverpool on a recent Saturday, we travelled very comfortably with eight passengers to a third class compartment as far as Waterloo, and although every compartment was full there were no standing passengers on the train. On reaching Euston, however, for the journey forward to Liverpool, we found that practically every third class seat bore a "reserved" label and that passengers were already standing in the corridors. The compartments were fitted with arm-rests which could be pushed up flush with the back of the seat to accommodate four passengers, but these were in the down position and reservations had been made only for six passengers in each compartment.

Suggestions to the passengers already in the compartments that the arm-rests might be raised to make room for another passenger on each side met with the reply that as the railway authorities had placed the reserved labels between the arm-rests, it was evidently the intention that only three passengers should be accommodated. The train ticket collector was equally unhelpful as he had no power to compel the passengers to make room. As a result, a considerable number of passengers stood all the way from London to Liverpool in the corridor of each coach, although there need have been no standing if each compartment had carried its complement of eight passengers.

It would be interesting to hear an official explanation from the Transport Commission as to why it is that one Region makes full use of the seating accommodation in its vehicles while another Region deprives the public of the use of 25 per cent. of the seats in its vehicles and thereby causes discomfort and dissatisfaction to a somewhat similar proportion of its passengers on main-line trains. Surely there could be no objection to reservations being made for eight passengers to a compartment during peak periods; and a simple locking arrangement no doubt could be devised to keep the arm-rests up at such times, so that the fullest use could be made of the available accommodation.

Yours faithfully,

T. H.



## The Scrap Heap

TRANSPORT UNION'S INCOME EXCEEDS  
£2,200,000

The annual report of the Transport & General Workers' Union states that the membership at the end of last year was 1,317,842—the highest union figure. The total income of the organisation during 1947 was £2,207,528.

### VOICE OF AUTHORITY

Sir,—Reading again, after many years, Mr. Churchill's "River War," first published in 1899, I came across this passage: "Nearly all State undertakings cost more, and are worse done than private businesses, exposed to the invigorating breezes of competition."

How true this is proving today!—From a letter in "The Daily Telegraph."

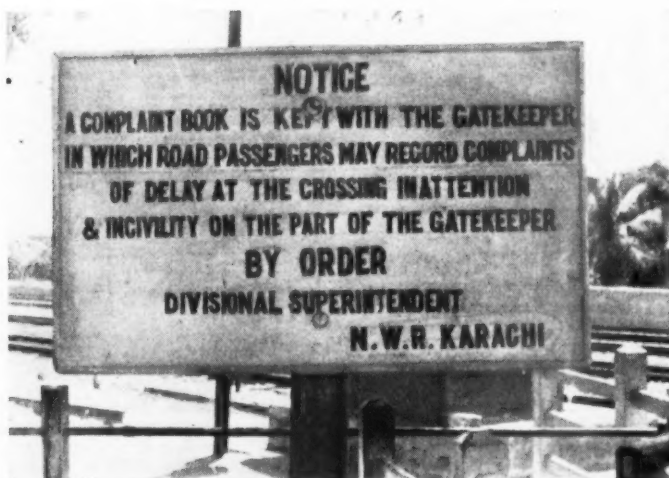
### GUERNSEY TOMATOES

British Railways, Western Region, has conveyed over a million more packages of Guernsey tomatoes by steamer and rail this season, than up to the same time last year. By the end of June, 1,616,000 packages, each weighing 14 lb., had been despatched to markets in the Midlands, North, West of England, Wales, and Scotland. Forty-three special trains already have been run from Weymouth.

### TRANSPORT FOR THE MILLION

Something like a new travel rush in London is revealed by the latest London Transport statistics, which show that 1,097,000,000 passengers travelled on London's buses, underground, trams, trolleybuses and coaches in the twelve weeks ended June 12. This is an all-time record and means that, compared with last year, an extra 9,000,000 passengers a week are now travelling, and represents an increase of 10 per cent. Every record for road and rail services has been broken in 1948, and a total of 11,000,000 extra miles of services have been run by the underground and the road services during the first 5½ months. Services have been increased every month, and they reached the highest level ever in the four weeks ended June 12, when the underground ran 17,000,000 miles of services and the road services 33,000,000.

### Appeasement at the Level Crossing



Drivers of vehicles held up at this level crossing in Pakistan are invited to record their experiences in a complaints book

Photo]

[Captain E. A. S. Cotton

## 100 YEARS AGO

From THE RAILWAY TIMES, July 15, 1848

**EASTERN COUNTIES RAILWAY.**—CARRIAGE OF GOODS between London and all the principal towns in the counties of Essex, Herts, Cambridge, Huntingdon, Suffolk, Norfolk, Lincoln, &c. In addition to these arrangements, the public are informed that goods are also received and forwarded, daily, between London and the Midland Counties, Durham, Northumberland, and Scotland, comprising, amongst other towns,—

Alnwick,  
Alfreton,  
Ambergate,  
Burton-on-Trent,  
Belper,  
Barnsley,  
Bradford,  
Beverley,  
Bridlington,  
Berwick-on-Tweed,  
Chesterfield,  
Derby,  
Doncaster,  
Driffield, Great,  
Darlington,  
Durham,  
Edinburgh,  
Grantham,  
Glasgow,  
Hull,  
Hartlepool,  
Keighley,  
Loughborough,

Leicester,  
Lincoln,  
Leeds,  
Melton Mowbray,  
Mansfield,  
Morpeth,  
Nottingham,  
Newark,  
North Shields,  
Newcastle-on-Tyne,  
Oakham,  
Pontefract,  
Pickingering,  
Rotherham,  
Stamford,  
Sheffield,  
Scarborough,  
Skipton,  
Stockton-on-Tees,  
Shields, North and South,  
Sunderland, and  
York.

Their extensive waterside premises at Blackwall are now in operation, from whence there is an easy and cheap communication with the East and West India, and London, and Saint Katherine's Docks, the breweries, and all other places of business on the banks of the Thames.

The Company's own carrying stock is exclusively employed for the collection and delivery of goods in all parts of London.

### RECEIVING HOUSES IN LONDON.

Clemmitt's Inn, Old Bailey,  
Belle Sauvage, Ludgate-hill,  
George-yard, Aldermanbury,  
51, Old Bailey,  
Saracen's Head, Skinner-street,  
Magpie and Stump, Newgate-street,  
Bull and Mouth, St. Martin's-le-Grand,  
Gerard's Hall, Basing-lane,  
Boar and Castle, Oxford-street,  
Gloucester Coffee-house, Oxford-street,  
Moore's Green Man, Oxford-street,  
Cross Keys, Gracechurch-street,  
Flower Pot, Bishopsgate-street,  
King's Arms, Bishopsgate-street,  
Four Swans, Bishopsgate-street,  
Saracen's Head, Aldgate,  
Hatchett's White Horse Cellar, Piccadilly,  
Old White Horse, Piccadilly,  
Spotted Dog, Strand,  
White Bear, Piccadilly,  
Fountain Inn, Foster-lane,  
Old George, Snow-hill,  
Talbot Inn, Borough,  
Phoenix, King William-street,  
White Hart, St. John-street,  
Ball Wharf, Queenhithe,  
St. Mary's Overy Dock Wharf, Southwark,

And the Company's general warehouses, Brick-lane Station, Spitalfields.

By order,

R. MOSELEY, General Manager.

Bishopsgate, July 12, 1848.

### SAFE-DRIVING AWARDS

Mr. A. S. Railston, District Goods Manager, Manchester, Eastern Region, British Railways, recently presented medals to one hundred and eighty-six goods department motor drivers with long safe-driving records. None of the drivers had a record of less than five years without an accident, and more than fifty had ten years or more accident-free records. The awards covered the period from 1942 to 1945, and staff at all the cartage stations in the Manchester district of the Eastern Region were among the recipients.

### TWO TO LOOE

During the 1914-18 war, it was thought that morale was sustained better by the phrase "Business as usual" than by the sour reminders that "there's a war on" which became familiar in the years 1939-45. Not only did some members of the public request personal attention, but the G.W.R., at least, was able to supply it, despite its other duties, as seen in the following correspondence between an intending passenger for Looe and the then Superintendent of the Line, Mr. C. Aldington. The traveller's request was phrased as follows:—

White Hill House,

Chesham, Bucks. September 8

Dear Sir,—If all is well I hope to leave here on the 27th of this month and would be glad to have your advice. I want my cat with me in the carriage, so can I take him third lavatory, not anywhere near the dining car, or would it be better to go first. I don't want to travel first unless it is necessary to do so and I should like a luncheon basket for two, cold chicken and the usual soda water, two small bottles. I will send a cheque for the tickets as soon as I have heard from you; single, as I intend to travel from Looe to other places. The doctor wants me to have change. An early answer will much oblige.

Yours truly,

(Signed) M. H. HICKMAN

P.S.—Please include the basket with the tickets, in haste for post.

Further instructions followed in subsequent correspondence before the day of the journey, including an inventory of luggage—a cabin trunk, two hat cases, two weekend cases, and a hamper. The outcome of it all for the G.W.R. was a repeat order from a satisfied customer and a tin of cream for the Superintendent of the Line:—

Looe West. October 3

Dear Sir,—Many thanks for your kindness to us. We had quite a splendid run and the cat was so good, but we were tired when we arrived at Looe. I am not troubling I hope too much, but my daughter is at Cheltenham at College and as I have to arrange my accounts up to date would you kindly tell me what her ticket return to Cheltenham would be from Coverack Cove third class, as I have to send a cheque to the Head, for her. I think some of the girls live at Falmouth and could they travel there together. Please tell me all the stations where changes would be and send me all particulars so I can send them to my daughter. May I send you a tin of the cream for all your kindness to us, and I hope you will accept it. Shall I send it to the same address.

Yours truly,

M. H. HICKMAN

I intend to leave for the Cove in November as soon as I can. There are 2 thousand soldiers at Falmouth so I cannot go there.

# OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

## SOUTH AFRICA

### Winter Season Special Trains

This winter many trains from the Transvaal to Natal are being run straight through to the various holiday resorts. Changing at Durban has been eliminated as far as possible. Schedules provide for the operation of 70 special trains between May and August.

### Port Elizabeth Harbour

The railway estimates for the current financial year provide for two first instalments of £25,000 each for widening and facing No. 2 quay of Port Elizabeth Harbour, as well as for erecting cargo sheds to serve the new berths. The total of £145,079 to be spent this year includes £11,000 towards the electric travelling wharf crane, which eventually will cost £21,000. The programme of works at Port Elizabeth involves the expenditure of nearly £3,000,000, of which £574,012 has been spent. More than half of this amount represents the preliminary estimate for double-facing No. 2 quay, the total cost of which will be about £1,564,000.

Additional goods sheds, offices, and carriage yards require £200,000; and £323,632 remains to be spent on the first portion of the new station building and system offices. A further sum of £3,193 will go towards the cost of the reclamation scheme, for which work £308,645 has been spent already. This scheme is now nearly completed, and very little more will need to be spent on it.

### Traffic Features

Coal conveyed by the railways in March amounted to 1,511,589 tons, an increase of 18,576 tons over March last year. Domestic requirements were large and only 194,263 tons could be exported, representing a decrease of 128,453 tons as compared with March, 1947. During the same month 316,950 tons of export traffic were cleared from the ports. The flow of imports remains very high and special allocations of wagons and engine power have had to be made to cope with the traffic.

Of the 28 Class "3E" electric locomotives ordered in Great Britain, 17 have been delivered in the Union. Eleven are in service on the Reef, and the remaining six are working in Natal. Outside industry supplied 171 new wagons to the railways in March, and 124 wagons of different classes were built or assembled in railway workshops. New wagons placed in traffic, therefore, amounted to 295, as compared with 247 in February, 1948.

## INDIA

### Railway Workers' Classification

The report of the Railway Workers' Classification Tribunal, constituted in March this year with Mr. T. Waterhouse as Chairman, has been accepted by the Ministry of Railways. The tribunal has recommended:—

(1) That where the classification of "skilled" and "semi-skilled" categories has not yet been defined, the fairest and best method of classification in each trade would be by means of trade tests.

(2) That in order to create an avenue of promotion for an unskilled labourer to a skilled tradesman, any labourer, who has completed three years' service and is able

to pass a specified simple basic trade test, should be admitted into the "semi-skilled" category and designated "basic tradesman" in the trade in which he has been tested, the percentage of such "basic tradesmen" in the "semi-skilled" category being fixed in accordance with the minimum requirements of each trade.

## CHINA

### Special Coach for President

The Tientsin-Pukow Railway is building a special coach for the use of President Chiang Kai-Shek. It will comprise a sitting room, two bedrooms, a bathroom, kitchen, and quarters for guards. The sitting room will serve also as the President's study and will be furnished with sofas, a conference table with eight chairs, and filing cabinets for documents and books.

### Reconstruction of Main Lines

The Canton-Hankow, Chekiang-Kiangsi, and Hunan-Kwangsi-Kweichow Railways constitute the main supply routes for the region south of the Yangtze River. On the 850-mile Canton-Hankow Railway, all temporary bridges have been replaced by permanent spans during the two years since traffic was resumed. On the Chekiang-Kiangsi Railway, traffic has been restored on 625 of its 750 miles. The remaining section will be reopened this August.

On the Hunan-Kwangsi-Kweichow Railway some 605 miles have been repaired. At present, except for the 35-mile Nantan-Kinchengkiang sector, trains are running the entire length of the railway. The extensions between Laipin, in Kwangsi, and Kwangchowwan, in Kwangtung; and between Tuyun and Kweiyang, are now under construction.

## VICTORIA

### Diesel Railcar in Service

The first of 12 102-h.p. diesel railcars ordered last year has been placed in operation between Wallan and Heathcote. The administration also has on order 12 140-h.p. units to work in pairs and 6 railcars of 153 h.p. with trailers.

### Wagon Tenders Invited

In consequence of the rolling stock shortage, the Railways Department has called for tenders from outside builders for the construction of 500 class "GY" 16- to 22-ton wagons for bulk meal and general goods traffic. This is the first time that outside purchases have been necessary in more than 20 years, wagons being built normally at the administration's Newport workshops, but owing to labour shortage in recent years it has been impossible to carry out as much work there as was desired.

Increased concern is being felt at the wagon shortage, which has been accentuated by the necessity of moving brown coal for industry. Demands for wagons to carry superphosphates, firewood, export traffic, and other commodities is abnormal. Recently, a special conference was arranged by the Railways Commissioners to discuss means of alleviating the position. Special emphasis was laid on the necessity of keeping wagons moving, and district officers were urged to seek the co-operation of railway users in the expeditious loading and unloading of the wagons.

Introduction of the 40-hr. week has re-

sulted in a heavy decline in the number of wagons unloaded on Saturdays. An appeal has been issued through the Press seeking the co-operation of all concerned in the rapid release of wagons, including the continuance of unloading operations on Saturdays.

## UNITED STATES

### Recording Diesel Driving Methods

An apparatus has been fitted to some goods and passenger diesel locomotives of the Atlantic Coast Line which records the manipulation by the driver of his throttle control on a graph showing the speed of the train. On the goods locomotives, where transition is effected manually, the record shows also the moments at which the driver changes the motor coupling. A dial is provided with the goods locomotive apparatus, marked with speeds and the regions in which transition should be effected.

Much useful information has been gained already from these records, enabling driving methods to be checked and the causes of inefficient operating to be detected at the source. For example, it was found from the first tapes recorded on goods locomotives that drivers were not operating the transition control correctly. In a few cases, it was seen that due to a backwards transition being delayed after speed had fallen considerably with a full throttle opening, serious overloads had been experienced. More frequently, it was found that drivers had been late in making forward transitions, particularly when accelerating out of large yards. Discussions with the drivers concerned showed that they had misunderstood their original instructions, and were not aware of the damage which might be caused to the electrical equipment by incorrect operation.

## ARGENTINA

### New Wagons for B.A. Provincial Railway

The Buenos Aires Provincial Railway has placed an order in the United States through the Trade Promotion Institute for 300 all-steel covered wagons. Delivery, in a semi-assembled state, is expected towards the end of August, and the vehicles will be prepared for service in the railway shops at La Plata. Provision was made for their purchase in the three-year public works plan of the Government of the Province of Buenos Aires.

### Diesels for Argentina

The Argentine State Railways are calling for tenders, until September 14 next, for the provision of 32 diesel railcars, 24 for metre gauge and 8 for 5-ft. 6-in. gauge. Tenders are being invited also, in this case until September 17, for 42 complete diesel trains, 22 for long-distance and 20 for suburban services. Specifications and conditions are available at ps. 200 each from the Oficina de Licitaciones, Ferrocarriles del Estado, Avenida Maipú 4, Buenos Aires.

### Stock Deliveries for State Railways

Eight ships have arrived within recent weeks from the United States, bringing new locomotives and wagons for the Argentine State Railways, these being part of the orders referred to already in these columns. In the case of the wagons, the frames, bogies, and other parts are being shipped separately and off-loaded in the port of La Plata, where the vehicles are being assembled.

## The Pennsylvania Railroad "Q2" Class Locomotive—2\*

Comparative boiler performance with that of "IIS" class 2-10-0 and "MIA" class 4-8-2 engines

By E. C. Poultney, O.B.E., M.I.Loco.E.

THE graphs, Figs. 2, 3, and 4 are interesting as showing for comparison the boiler performance of the Pennsylvania 2-10-0 Class "IIS" and 4-8-2 Class "MIA" engines, and the 4-4-6-4 Class "Q2" locomotive. Particulars of the boiler heating surfaces will be found in Table IV.

The graph, Fig. 2, shows the relative boiler efficiencies compared with the rate of heat output per cu. ft. of firebox volume, and includes information on the firebox volume grate-area ratios for the three boilers.

The "IIS" boiler is the most efficient when the heat outputs per cu. ft. of firebox volume are equal, though it has the smallest firebox in relation to the area of the fire grate.

The diagram Fig. 3 makes a further comparison of these three boilers; this time the efficiencies are compared with the heat output per sq. ft. of grate area. There is seen to be little difference in the economic performance of the boilers when the rate of heat output for each sq. ft. of grate area is the same. In other words, it does not seem that the very considerable volume of the firebox in relation to the area of the grate of the "Q2" boiler,

other boilers, which may be due to the consistently low front-end heat losses.

The coal used for these tests had a calorific value per lb. of dry coal of 14,037 to 13,250 B.Th.U. These are the

values shown by two different samples. Similarly, these two different samples gave the following analyses:—

	Proximate	Ultimate
Fixed carbon ...	61.07	78.16
Volatile matter ...	28.73	4.83
Moisture ...	0.46	1.52
Ash ...	9.74	4.53
Sulphur ...	1.17	9.78
		1.18
Carbon ...		73.27
Hydrogen ...		4.86
Nitrogen ...		1.57
Oxygen ...		5.35
Ash ...		12.97
Sulphur ...		1.98
B.Th.U. per lb. dry coal ...	14,037	13,250

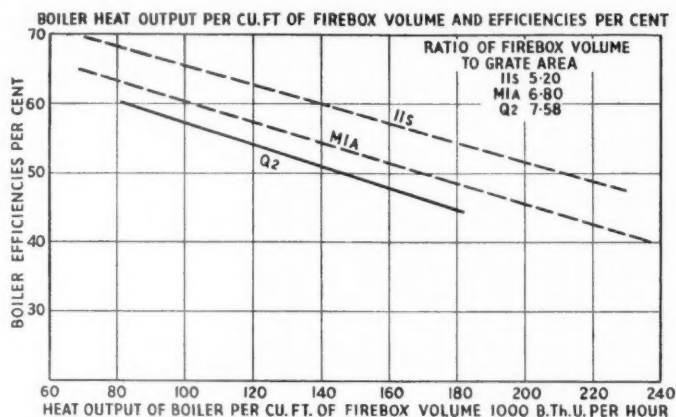


Fig. 2—Heat output per cu. ft. firebox volume and efficiencies

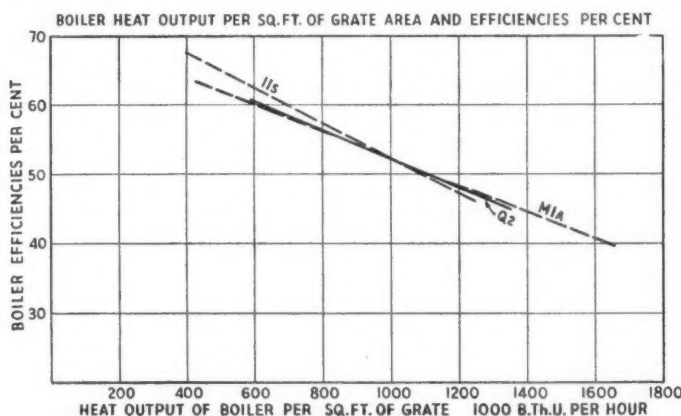


Fig. 3—Heat output per sq. ft. of grate area and efficiencies

has any material effect on the efficiency of the boiler.

The next plot, Fig. 4, shows for comparison, the efficiencies at equal rates of heat output per hr., and is interesting as showing in an unmistakable manner the high capacity of the "Q2" boiler, which is considerably in excess of that obtainable with the "IIS" and "MIA" locomotives. For the same heat output, the "Q2" boiler is much more efficient because it is much larger, having more heating surface and a larger grate, meaning, therefore, that for a given total heat output per hr., the heat output per sq. ft. of grate area is less. Another point brought out by this plot, is the close similarity in the drop in efficiency at the rate of working increases, the rate of inclination of the three lines denoting the efficiencies being much the same. The efficiency of the "Q2" boiler falls rather less slowly than that of the

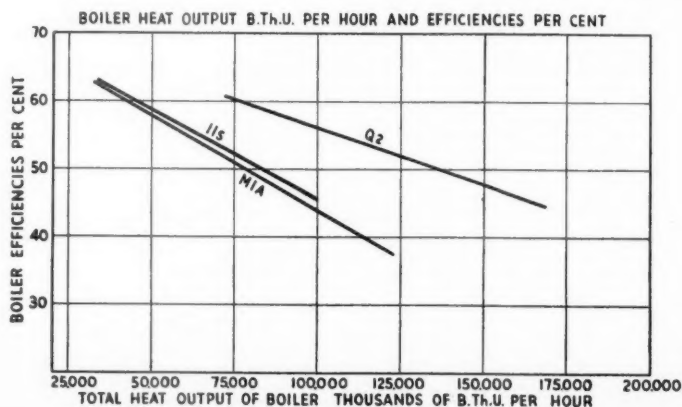


Fig. 4—Heat output per hour and efficiencies

\* Part 1 of this article appeared in our issue of July 9



TABLE IV—DIMENSIONS OF PENNSYLVANIA LOCOMOTIVES,  
CLASSES "Q2," "MIA" AND "IIS"

Class	"Q2"	"MIA"	"IIS"
Type	4-4-6-4	4-8-2	2-10-0
Cylinders No., dia. × stroke	(2)19½ × 28 in. (2)23¼ × 29 in.	(2)27 × 30 in.	(2)30½ × 32 in.
Driving wheels, dia.	69 in.	72 in.	62 in.
Boiler steam pressure	300 lb. per sq. in.	250 lb. per sq. in.	250 lb. per sq. in.
Heating surfaces, sq. ft. fire contact—			
Tubes and flues	5,470	3,908	4,104
Firebox	703	406	287
Evap. total	6,173	4,314	4,391
Superheater	3,624	2,052	2,410
Total	9,797	6,366	6,801
Grate area	121.7 sq. ft.	70.0 sq. ft.	70.0 sq. ft.
Maximum evap. water	137,479 lb. per hr.	99,095 lb. per hr.	64,656 lb. per hr.
Maximum heat transfer	167,944	120,203	81,580
B.T.U., 1,000 per hr. total—			
Per sq. ft. of grate area	1,380	1,717	1,163
Per cub. ft. of firebox vol.	182	253	224

facts are that steam-chest pressures are frequently low during the admission period, and in consequence the admission line shown by the indicator falls rapidly up to cut-off. A large steam-chest volume is essential, as it will tend to hold up the admission pressure.

Particulars of the steam pressure, losses between the boiler and the steam pipes at the cylinders in relation to rate of steam flow, superheated steam lb. per hr., are:—

Test	Steam flow lb. per hr.	Pressure drop, lb. per sq. in.	Front engine	Rear engine
1732	98,952	6.9	7.4	
1749	134,476	10.4	11.1	
1729	128,108	10.3	11.3	
1748	133,046	11.4	11.8	
1755	71,871	3.6	3.7	
1747	127,451	10.7	11.3	
1745	125,275	10.5	10.9	

It will be seen that the actual pressure losses are comparatively low in relation to

the very high rate of steam flow through the steam piping, including the superheater elements.

When carrying out the tests of this locomotive, it was found desirable to increase the counterbalance for the reciprocating masses. As designed for road service, 28.3 per cent. of the reciprocating weights are balanced, however, to protect the testing-plant dynamometer. The amount of the unbalanced reciprocating parts was reduced to 49.5 per cent. by adding additional counterbalance.

With this additional amount of balance, it was not found possible to run the engine satisfactorily at speeds below 160 r.p.m., because of the considerable amplitude of movement when the leading and hind engines were in phase. Therefore most tests were at speeds of 200 r.p.m. and over.

The "Q2" engines are fitted with twin

blast-pipes of the Kiesel six-point type, exhausting into an egg-shaped chimney. The areas through the nozzles for the front and rear engine exhausts are 24.6 and 33.3 sq. in. respectively.

Particulars of the least back-pressures shown for the front and rear engines, and the corresponding amounts of steam discharged through the exhaust nozzles lb. of steam per hr. are as under. The steam exhausted is less than that furnished to the superheater by the amount taken by the feed-water heater.

Test	Steam, lb. per hr. through nozzles	Least back-pressures Front	Rear
1732	89,855	16	16
1749	120,285	27	28
1729	114,243	25	26
1748	125,166	33	31
1755	69,906	9	8
1747	120,729	31	31
1745	119,233	30	30

The concluding Table VI gives particulars of the steam and fuel rates per i.h.p. hr., and the performance of the locomotive as shown by the dynamometer, h.p. developed, and the coal and water required per d.b.h.p. hr.

The steam rates are consistently low, more especially when the high powers developed are considered. This is in part due to the relatively short cut-offs required for the high rates of power output, and also to the high steam temperatures. The efficiency of the steam action varies within the limits of 15.3 and 12.9 per cent. The efficiency is based on the heat in the superheated steam, less the heat content of the liquid at exhaust pressure.

TABLE V—ENGINE PERFORMANCE—RUNNING CONDITIONS—STEAM PRESSURES AND TEMPERATURES

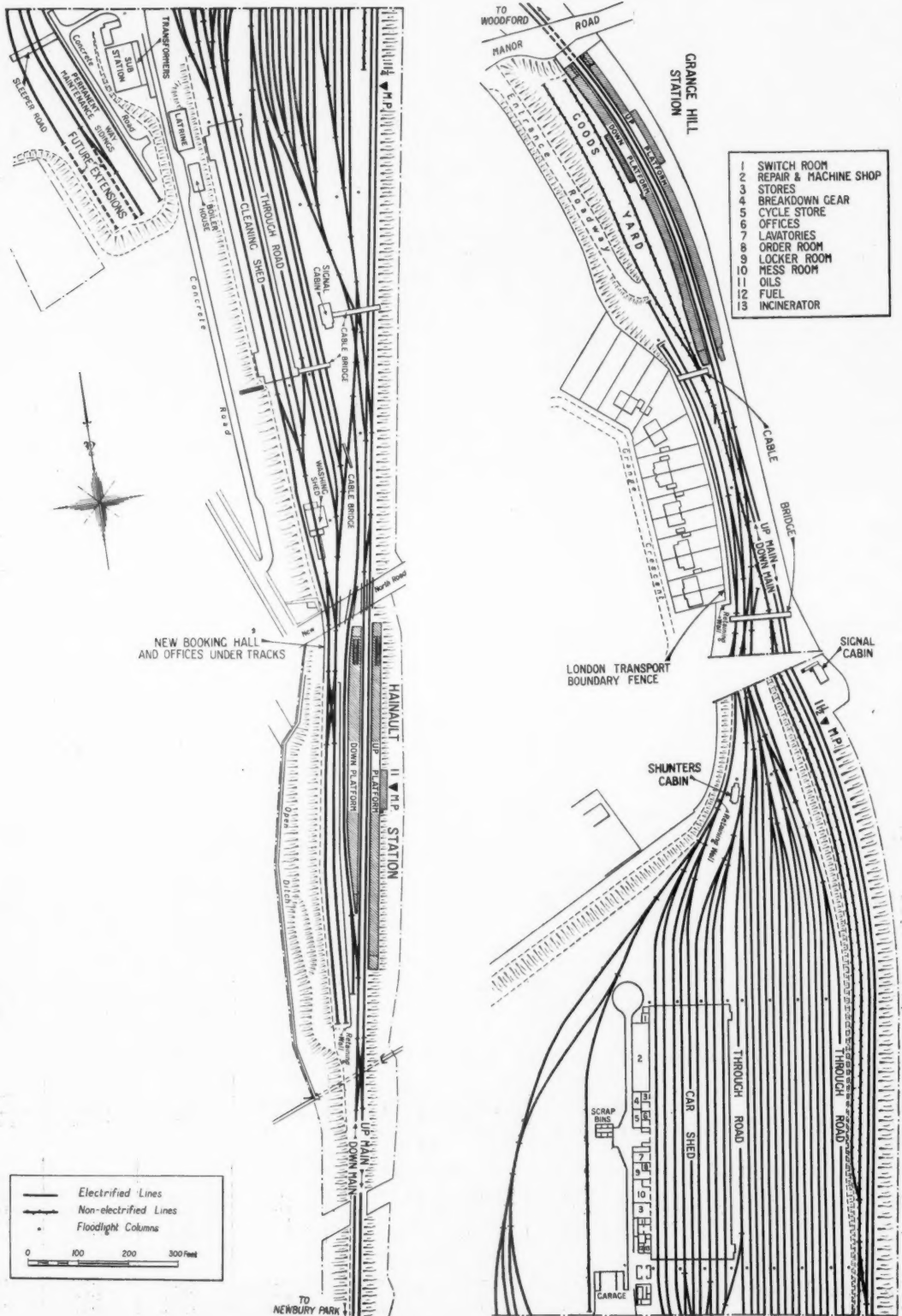
Test No.	Test designation	Steam pressures, lb. per sq. in.			Steam temp.		Cut-off per cent. actual	Mean effective pressure
		Boiler	Steam chest	Least back	Superheat	Total temperature		
Front Engine. Without Induction Tubes								
1732	200-40-F	294	297	16	292° F.	710° F.	44	164.5
1749	240-47-F	290	287	27	317° F.	732° F.	48	163.4
1729	280-40-F	294	297	25	315° F.	732° F.	44	149.8
1748	300-42-F	287	285	33	321° F.	735° F.	46	140.9
With Induction Tubes								
1755	200-25-F	296	297	9	244° F.	663° F.	29	131.0
1747	240-47-F	293	288	31	321° F.	737° F.	47	161.7
1745	280-42-F	287	287	30	327° F.	742° F.	42	143.3
Rear Engine. Without Induction Tubes								
1732	200-40-F	294	295	16	292° F.	710° F.	41	142.5
1749	240-47-F	290	294	28	317° F.	732° F.	46	147.9
1729	280-40-F	294	296	26	315° F.	732° F.	42	124.8
1748	300-42-F	287	293	31	321° F.	735° F.	44	115.5
With Induction Tubes								
1755	200-25-F	296	303	8	244° F.	663° F.	26	108.2
1747	240-47-F	293	291	31	321° F.	737° F.	46	144.0
1745	280-42-F	287	290	30	327° F.	742° F.	41	122.0

TABLE VI—ENGINE PERFORMANCE—HORSEPOWERS—COAL AND WATER RATES

Test No.	Indicated horsepower			Coal per i.h.p. per lb.	Steam per i.h.p. per lb.	Cyl. eff. per cent.	Drawbar h.p.	Coal per d.b.h.p. per lb.	Steam per d.b.h.p. per lb.
	Front engine	Rear engine	Total						
Without Induction Tubes									
1732	2,793.2	3,617.9	6,411	2.68	15.4	14.3	5,664	3.04	16.5
1749	3,325.4	4,507.2	7,833	3.24	17.2	12.9	7,016	3.61	17.7
1729	3,554.8	4,432.1	7,987	3.00	16.0	13.8	6,782	3.54	17.4
1748	3,581.2	4,394.5	7,976	3.76	16.7	13.3	6,669	4.50	19.3
With Induction Tubes									
1755	2,221.3	2,744.1	4,965	2.46	14.5	15.3	4,172	2.93	16.4
1747	3,289.8	4,387.3	7,677	3.75	16.6	13.4	6,825	4.22	18.3
1745	3,402.1	4,336.5	7,739	3.51	16.2	13.6	6,603	4.12	18.6

Coal per i.h.p. and per d.b.h.p. hr. based on total coal "as fired" per hr.  
Steam per i.h.p. hr. cylinder feed only  
Steam per d.b.h.p. hr. based on total water taken from tender less loss at safety valves

## Hainault Rolling Stock Depot



Layout of the London Transport rolling stock depot at Hainault, showing the approach from Hainault and Grange Hill stations

## Hainault Rolling Stock Depot

*Details of the new London Transport Depot, which, with the depot to be brought into use at West Ruislip, will handle all routine examination and repairs of Central Line rolling stock*



*General view of the London Transport Hainault depot from Grange Hill direction*

THE extension of the Central Line from Newbury Park to Hainault on May 31, which was the subject of an article in our May 28 issue, has brought into prominence London Transport's new rolling stock depot at Hainault. The Depot is situated between Hainault and Grange Hill Stations, and, though built just before the war, was not fully equipped at that time.

On June 1, 1943, Hainault Depot was taken over by the United States Transportation Corps to assist in the assembly of rolling stock for the allied forces on the Continent. As a result, spare Central Line trains intended for the increased service to be introduced with electrification, were shunted to open roads and suffered a certain amount of deterioration from exposure to the weather. The Americans left the depot in January, 1945, and since then it has undergone considerable renovation.

Hainault Depot first came into service for London Transport when the Central Line was extended from Leytonstone to Newbury Park in December, 1947, since when trains daily have been running empty over the tracks to and from the depot.

### Standard Layout

The layout of the depot, which is illustrated on the opposite page, conforms to standard London Transport design. Through the main car shed there are nine roads, each capable of accommodating nine cars and fitted throughout with an inspection pit for examination and repair work. Two of the roads in effect are a lifting shop, as they are used for all heavy repairs which involve the lifting of cars, and above them runs a 15-ton travelling crane.

From the main car shed the nine roads converge into three and so pass through the cleaning shed, which is to the south of the main shed. The cleaning shed is used for the routine cleaning of interiors and exteriors of cars. These three roads in turn converge into a single road, which

runs through the washing machine. The washing machine is of the latest design, in which a train is washed as it slowly passes through a series of water jets and revolving felts beating against its sides. An eight-car train can pass through the machine and emerge completely washed in approximately one minute.

Parallel to the main car shed are the stabling sidings, consisting of 13 roads, each capable of accommodating 18 cars. On each side, is a through road to permit the movement of trains from one end of the depot to the other and one of these through roads connects to three lay-by sidings, on each of which nine spare cars

can be stabled. In all, a total of 344 cars can be accommodated in the depot.

To prevent the equipment freezing-up in trains stabled on the sidings in cold weather, it is intended to erect four interspersed screens, the longest of which will be 900 ft. The northern end of the screens will be fitted with roller shutters and the structure designed to take a roof if it is found to be desirable.

When in full operation, the depot normally will be entered from the Hainault Station end, though access also is available from both main-line roads at the Grange Hill Station end. Some 200 men will be employed at Hainault Depot, which together with the depot to be brought into use at West Ruislip, will handle all routine examination and repairs of Central Line rolling stock and leave only the heaviest overhauls to be carried out at Acton Works.

**BEST-KEPT STATIONS COMPETITION.**—The twelve best-kept Underground stations of the year have been announced by London Transport as follows:—

Metropolitan and Bakerloo (Stanmore) Lines ...	Swiss Cottage Station group (including St. John's Wood)
Inner Circle (North side), Hammersmith and East London Lines ...	Moorgate
Piccadilly and District Lines... (Western)	Northfields Station group (including Boston Manor)
District Line ...	Aldgate East
Piccadilly Line ...	Oakwood Station group (including Cockfosters)
Northern Line ...	Kennington
Northern Line (Central and Southern)	East Finchley
Northern Line (Northern section)	Elephant & Castle
Bakerloo Line ...	Tottenham Court Road Station
Central Line ...	

The competition is an annual one and has nearly 200 entrants. Stations are inspected once a month by high London Transport officials, who adjudicate the competition, and marks are given for courtesy, cleanliness, good traffic handling and general management. East Finchley wins the competition in its section, for the fourth year in succession.

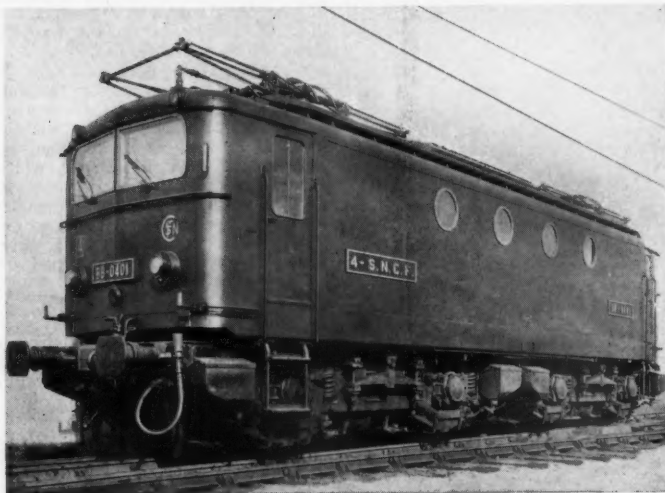


*Interior of the main car shed, with the lifting shop in the foreground and inspection road on the left*



## French National Railways BoBo Locomotives

*The latest version of a numerous class will be used for mixed-traffic services on the forthcoming Paris-Lyons electrification*



THE French National Railways have ordered 136 BoBo locomotives for mixed-traffic service on the Paris-Lyons line, now being electrified at 1,500V. d.c. They are based on the locomotive BB-0401 illustrated, which was built by the Société Alstom in its shops at Belfort. Nearly 600 locomotives of this type are in service, having been designed in 13 batches, mostly by the Alstom company, each batch incorporating improvements agreed on between the S.N.C.F. specialists and the builder in collaboration.

In designing the BB-0401 locomotive, the S.N.C.F. called attention to the importance of giving increased facilities for dismantling and easy access to parts under repair in its workshops and depots. The plans aimed at providing increased power, reducing upkeep costs, increasing distance run between overhauls, and adapting all parts to series production. As the railway had decided to increase axle loads from 20 to 23 tonnes, a new and more powerful motor was designed. The power was raised from 475 to 600 h.p., or 2,400 h.p.

in all for the four motors in the locomotive.

The motors are of the series compensated type, which has permitted a greater variation between the speeds with full field and weak field for a given current than in the earlier BoBo locomotives. The maximum speed has been raised from 65½ m.p.h. to 71½ m.p.h. Each pair of motors is connected in series, and control is by series or parallel connection of the pairs, with bridge transition. The number of accelerating notches has been increased to 40, and with each motor connection (series or parallel) there are nine weak-field notches.

The locomotive is built to work both passenger and freight trains. On the level it hauls a freight train of 1,282 tons at 51.2 m.p.h., and on a gradient of 1 in 200 at 33.2 m.p.h. The corresponding speeds for a passenger train of 493 tons are 71.4 m.p.h. and 63 m.p.h. Over the steepest gradient, 1 in 125, on the Paris-Lyons line it will handle all trains not over 1,034½ tons. The previous tonnage limit was 887½

tons for locomotives of the BoBo "0325" class. The new locomotive has normally an adhesion weight of 90 tons 12 cwt. in order to utilise fully the axle load of 22 tons 13 cwt., but at present the tracks are in a transition period with respect to maintenance. Hence the locomotive is adapted for axle loads of either 22 tons 13 cwt. or 19 tons 14 cwt. by the addition or removal of ballast.

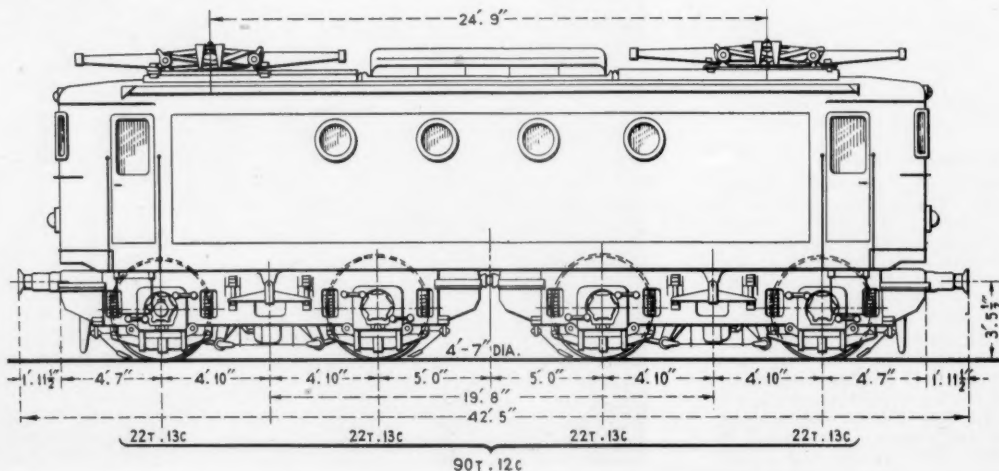
To give increased strength to the longitudinal frame members, these were made tubular by bending two plates in [ ] form and welding them electrically. With less weight, the transverse moment of inertia is increased ten times. This increase in transverse rigidity improves the frame resistance to shocks, and thus adds to the stability of the locomotive.

### Attachment of Axleboxes to Frames

Axlebox guides present the drawback of being subject to heavy wear by friction. They cannot be protected from abrasion by sand or dust, nor can they be lubricated satisfactorily. Axleboxes of the BB-0401 locomotive have no guides. Instead they are attached to the frame by short connecting rods, mounted on Silent-bloc bearings. In vertical displacement, the connecting rods yield, the Silentblobs are subject to torsion, and to compensate for the decrease in the horizontal length of the rods, the axlebox undergoes a very slight rotation.

Under the action of lateral thrusts transmitted to the axleboxes, the Silentblobs are subject to a compression which gives rise to reaction thrusts amounting to some 10 to 11 tons per axle for a maximum lateral displacement of ¼ in. As well as obviating lubrication, the arrangement adopted also suppresses shocks between the axlebox and the frame. In order to protect the motors from lateral shocks on curves, the motor body is attached transversely to the bogie frame by a rod mounted on Silentblobs.

To reduce time out of service, all items of apparatus are in removable units, comprising a mounting frame, wiring, and compressed-air conduits. These units can be disconnected quickly and lifted out of the locomotive through the roof opening between the two end driving cabs. In service, the opening is closed by three movable covers. The outer two covers each carry a pantograph and a ventilator group. In this way, a unit can be lifted



Leading dimensions of S.N.C.F. BoBo mixed-traffic locomotive

out and replaced by another in a short time. At depots, any item can be removed separately from its block. In particular, the high-tension contactors are mounted by means of combined terminal and fixing screws, so that the operation of fixing them in position simultaneously makes the electrical connections by tightening only two screws.

The apparatus units, including the air conduits, in the driving cabs are arranged in a similar manner. These arrangements facilitate routine overhauls. Instead of working under difficult conditions inside the locomotive, the staff can do most of the inspection outside much more easily, which means saving an appreciable out-of-service time.

Experience has shown that a most important operation in routine maintenance is the removal of dust in order to keep insulating surfaces and low-tension contacts in efficient condition. Dust is picked up from the track ballast, wear of brake shoes, and from the soot and smoke of steam locomotives. All these forms of dust enter through the traction motor ventilator openings, which take in about 212 cu. ft. of air per sec. In the BB-0401 locomotive, all the air required is taken in through long baffle-plate conduits on the roof—that is, in the zone where the dust content is at a minimum—instead of through inlets on the body sides. Further, the motor-ventilation air is conducted directly through readily detachable tubes and no longer circulates round the apparatus.

An auxiliary ventilator fitted to each group of motor ventilators ensures slight cooling of resistances and cut-offs, and sets up a slight excess pressure in the body, checking the entry of snow and dust.

The driving cabs, fitted with double roofs, are heated by the circulation of warm air from an electric heater. The windows are fitted with wipers, and have double panes, between which warm air circulates to keep the glass free from condensed moisture and frost. An electric heater is provided in one cab to enable the train crew to warm food *en route*, which is appreciated on long runs.

The new locomotives for the Paris-Lyons line are being built by the Société Alsthom, and were described recently in the *Revue Générale des Chemins de fer* by Monsieur J. Trollux, Manager of the Traction Division of that company.

**ITALIAN LOCOMOTIVE STOCK.**—On March 31 this year the Italian State Railways had 709 d.c. and 553 3-phase locomotives in service. The corresponding figures at December 31 last year were 660 d.c. and 545 3-phase locomotives, comparing with 525 and 510 respectively at the beginning of last year.

**RESTORING THE ROME—GENOA ELECTRIFICATION.**—Re-electrification of the Genoa—Pisa—Rome main line is proceeding rapidly, a further important step having been taken on May 9, when electric traction was resumed between Spezia and Livorno (Leghorn). This section had been reconverted as far as Sarzana last December (see article and map in our February 6 issue). Electrification is now complete between Genoa and Livorno. The re-conversion of the 196½-mile section between Rome and Leghorn has been in hand for several months and it is expected that it will be completed this summer. The 14½ miles between Rome and Ponte Galeria were electrified last summer.

## Italian Electric Trains and Railcars

*Improvements introduced in designing new stock and reconditioning older vehicles to meet modern standards*

A NEW 3,000-volt d.c. seven-coach electric train for the Italian State Railways, now in the design stage, will incorporate the latest electrical technique and a number of amenities designed to provide the passengers with maximum comfort. The train will be powered by 12 motors, and will be capable of a speed of 99.5 m.p.h. It will provide accommodation for 170 passengers in four coaches marshalled at the ends, the central vehicles consisting of dining and luggage cars. Special attention is being paid to the air-conditioning plant, which, like the cooking equipment in the restaurant car, will be supplied with three-phase current from a motor-alternator, having a standby diesel engine in case of a power breakdown.

The train will be heated by electricity throughout, taking current from the 3,000-V. contact line. Thermostats will maintain the temperature in the coaches at any desired level. It is the policy of the Italian State Railways to adopt this system in place of steam heating throughout their electrified lines. Electric lighting current will be supplied from axle-driven dynamos, with a battery of accumulators on floating charge.

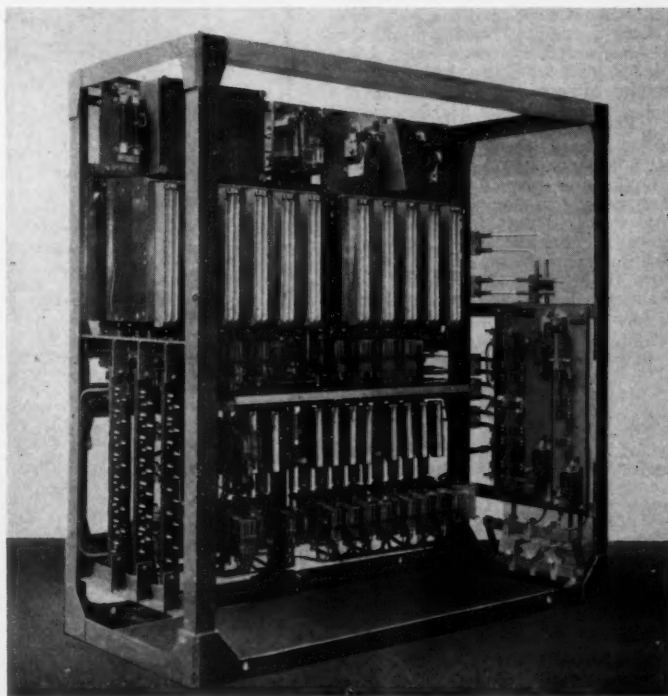
A beginning is being made also with the introduction of new single-unit electric railcars, developed from the earlier "ALE840" class, in which notable improvements have been made in the motor suspension and springing of the body. They seat 84 passengers and run at a

maximum speed of 80.75 m.p.h. The four 750-kWh motors provide sufficient reserve of power for hauling two 84-seat trailer coaches.

In these vehicles a 3,000-V. d.c. motor drives a generator to provide current for the low-tension control circuit and lighting, and also operates a compressor. The motor excitation is regulated automatically to maintain a constant speed over a wide range of input voltage variation, so that the cars can be used without inconvenience on lines where electrification has been restored on a utility basis, and the supply is liable to changes of pressure.

When rebuilding certain old electric trains in recent months, the continuity of supply for the air-conditioning and the electric kitchens in the case of faulty starts or breakdowns in the traction current had to be provided for. This has been done by installing a d.c. motor and alternator, together with a diesel engine to drive the alternator in an emergency. A considerable advantage achieved in this way is the replacement of the costly and vulnerable 3-kV. motors driving the various auxiliary services by commercial three-phase motors. Many improvements have been introduced in the air-conditioning plant, all sections of which now operate automatically. Centralised manual control, which is available as an alternative, regulates simultaneously the change of air, and the heating, cooling, and humidity of the incoming air.

### Control Equipment for S.A.R. Reef Electrification



Assembly of Metropolitan-Vickers control gear for South African Railways 3,000-V. d.c. motor coaches, arranged for removal as a complete unit for servicing

## The Newfoundland Railway Jubilee

*Through running between St. John's and Port aux Basques began on June 29, 1898*

*By T. W. Frost*



Corner Brook Station

**T**HIS year is the jubilee of the first train to run through from St. John's to Port aux Basques on the then Northern & Western Railway of Newfoundland, for in June, 1898, the 547-mile line was completed. As early as 1847 there was talk of constructing a line from St. John's to Harbour Grace. No serious move was made till 1875, when the Legislature appropriated money for a survey from St. John's along the south coast, a distance of 350 miles. A Canadian Engineer, Sanford Fleming, made a survey and recommended a light narrow-gauge railroad. A few years later a company calling itself the Great American & European Short Line proposed to build a railway on this survey, but nothing came of the project.

### Early Construction Work

The first railway company in Newfoundland was incorporated in June, 1881, and work began in August of that year on a 3-ft. 6-in. gauge line from St. John's northwards to the Halls Bay district, some 300 miles away to the north-west. Sixty miles of track were laid before the contractor gave up. This was known as the Halls Bay Railroad. The route was then altered to St. John's-Harbour Grace, and in 1886 another route to Placentia, the old capital, was completed after four years' work.

In 1890 the contract for completing and extending the line to Halls Bay was awarded to Robert G. Reid. When the line reached Norris Arm, the whole plan was altered and revised. The original motive for constructing the line to Halls Bay was to capture the freight traffic from the copper mine at Tilt Cove, which had been worked by the Cape Copper Company since 1860, and from the Little Bay Mine, owned by an English firm. The mineral had been shipped direct to Swansea and smelted there. One mine was beginning to run out, and reports of rich deposits at Halls Bay proved mythical.

In 1893, Reid was awarded a new contract to construct the railway right through the heart of the country to Port aux Basques. This work was completed in the autumn of 1897, and named Northern & Western Railway. The first through passenger train left St. John's at 7 p.m. on

Wednesday, June 29, 1898, carrying 50 passengers, arriving at Port aux Basques on the following day, 27 hr. 45 min. later. The train was composed of one baggage car, one coach, one dining car, and two sleeping cars. The fastest time today scarcely shows an improvement over 1898.

The Reid contract was extended to 1948, and from 1898 the line was known as Reid's Newfoundland Railway. The year 1909 saw further extensions planned, but

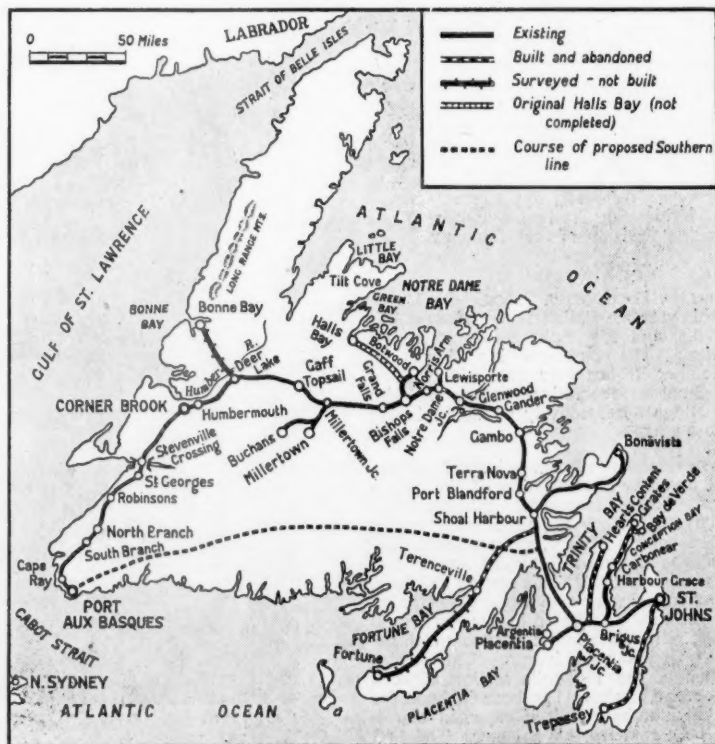
though the Fortune Bay and Bonne Bay branches were surveyed and graded, they were never completed.

The world war of 1914-18 and the economic troubles which followed began to weigh heavily on the Reid management, and in 1920 appeals were made for Government help and intervention. In 1921 the Government brought in Sir G. Bury, former Vice-President of the Canadian Pacific. His report showed that between 1904 and 1921 the deficit had amounted to nearly \$6 million, and estimated that the loss for the coming year would be nearly another \$2 million. No agreement could be reached, but in May, 1922, the crisis came to a head, there being no cash to meet the payroll. The railway services ceased to function, and for some weeks the internal transport system was paralysed. The Government agreed to take over the railways on July 1, 1923, and to cover deficits till then. The railway began to function again on May 22, 1922.

Mr. H. J. Russell took charge, and faced an enormous task. He had to spend over \$8 million of public money. A major problem was the fact that the original Carnegie rails, weighing 56 lb. per yd., were worn out. It is to the credit of Mr. Russell and his staff that the railway was able to cope with the enormous strain put on it during the second world war, for by then the deficit had risen to \$16 million. The C.B.E. awarded to Mr. Russell was well earned.

One-third of the country is a network of rivers, interlocking with lakes, while the hinterland is bare and rocky, undulating with mountains. Delays due to snow in winter are frequent, and trains have been snowbound for three weeks.

Floods and landslides are frequent all the year round. Constant stops for straying Caribou and other animals have to be made. So fierce are the coastal gales that



Map of existing, abandoned, and proposed railways in Newfoundland



more than once a train has been blown off the track, one of the most dangerous spots being Cape Ray, a few miles from Port aux Basques, where the track is laid across a bed of shingle and exposed to south-westerly gales. Humbermouth and Corner Brook, outside St. Johns, comprise the most important industrial area in the country, with the extensive timber mills and the new port provided by the Humber River. Both the Anglo Timber Company and the Bowater Paper Company have their own extensive railway sidings, which link up with the Newfoundland system.

#### Branch Lines

Just over 200 miles inland from Port aux Basques, the railway rises to its highest point near Gaff Topsail, 1,440 ft. above sea level, 333 miles from St. Johns. From here it crosses the mountains, and from Millertown Junction, a branch runs to Buchans and Millertown. Onwards, the route is wild and desolate. The next place of importance is Bishops' Falls, the end of the Western Division, and here, on most trains, change of locomotive is made.

Another branch runs north from Notre Dame Junction to Lewisporte. Gander is today a hive of activity, with its modern airport, and from here the line begins to turn south through Terra Nova, and Port Blandford, to Shoal Harbour, where a branch strikes out to Bonavista on the coast. From Placentia Junction there is a connection to Placentia, the ancient capital, and from Brigus, a few miles to the east, the last of the branch lines runs up the shores of Conception Bay as far as Carbonear. This is the site of the largest timber and joinery works in the country, and here the writer had the pleasure of meeting Mr. R. G. Reid, who built the railway 50 years ago. He was indebted to Mr. Reid for much information, courtesy, and kindness, although on the occasion of

his visit he was in the midst of dealing with labour troubles and strikes. At one time the railway continued to Bay de Verde and Grates, but this section was abandoned about 1933.

The terminus at St. Johns is quite imposing and busy, with fair-sized marshalling yards and warehouses. Another

the management of Mr. H. J. Russell, the General Manager of the railway.

Two interesting relics of the original through railway are still at work. Locomotive No. 1, built by Baldwins in 1898, is a shunter at St. Johns Yard; and the coach *Terra Nova* (the original name in Latin for the country), built for the Reid



"Foreign Express" leaving Port aux Basques

branch, long since dismantled, ran from St. Johns to Trepassey at the farthest south-eastern corner of the peninsula. One of the few roadways has replaced its usefulness, together with the easier facilities provided by the numerous coastwise ships.

The Government also runs coastal steamers in conjunction with the railways and postal system, which today are under

railway, is also in traffic. Passenger traffic on the railway expanded considerably in the war years, reaching a peak of 406,000 in 1943-44, which compared with 161,000 in 1939-40. In the same year 833,000 tons of goods were conveyed, although this traffic reached its maximum of 1,050,000 tons in 1941-42, against 506,000 tons in 1939-40.

## Resistance Bar-Heating Machine

*Electrical method achieves economy in time and manpower*

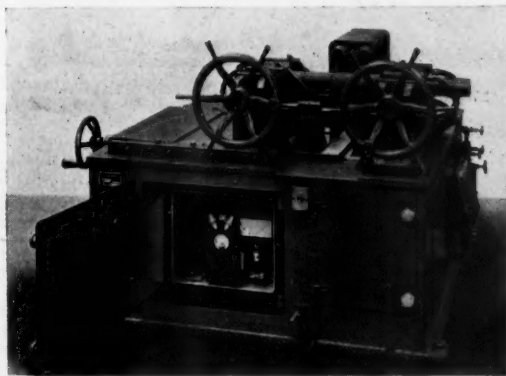
THE Metropolitan-Vickers Electrical Co. Ltd. has designed a machine for the electrical resistance heating of bars prior to their being bent, formed and forged. This method of heating is replacing the older furnace methods chiefly because of the advantages of: (1) Its cleanliness compared with furnace methods; (2) higher speed of heating; (3) reduced scaling because of the shorter time the bar is held at high temperature;

(4) uniform heating; and (5) economy in manpower and fuel. The last-named advantages are secured because the machine is energised and attended to only when in operation; and because it has a smaller area for radiation than a furnace.

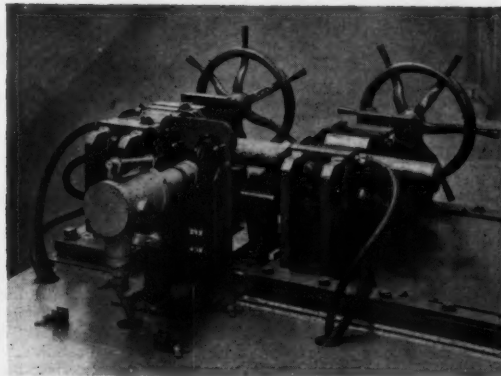
The Metrovick 25-kVA. bar-heating equipment is of extremely robust construction and designed for heating mild-steel bars from 1½ to 2½ in. dia. to temperatures in the region of 1,000° C. over a

length of from 13 in. minimum to 20 in. maximum. One of the bar-clamping electrodes is adjustable for the different bar lengths, the adjustment being controlled by the handwheel on the left-hand side of the machine. Bars are clamped in the horizontal position, and can be loaded either from the front or from the ends.

A radiation pyrometer of the pre-set control type holds the temperature within plus or minus 30° C. of the set figure. A 2½-in. dia. bar can be heated to 1,000° C. over a length of 20 in. in 1½ min.; a 1½-in. dia. bar heated over a length of 13 in. takes only 20 sec.



General view of the machine, with door of pyrometer control panel open



Rear view showing the photo-electric radiation pyrometer with cover removed

## Improvements at Wembley for Olympic Games Traffic

*New booking hall and footbridge at Wembley Park Station, London Transport, will facilitate movement of visitors to the Fourteenth Olympiad*

IN preparation for the Fourteenth Olympiad at Wembley Stadium this month, work has been going on for some time to improve road and rail facilities to and from Wembley Park Station, London Transport. The widening and regrading of Bridge Road on each side of the station, together with the reconstruction and widening of the bridge over the railway, have been undertaken by Wembley Borough Council.

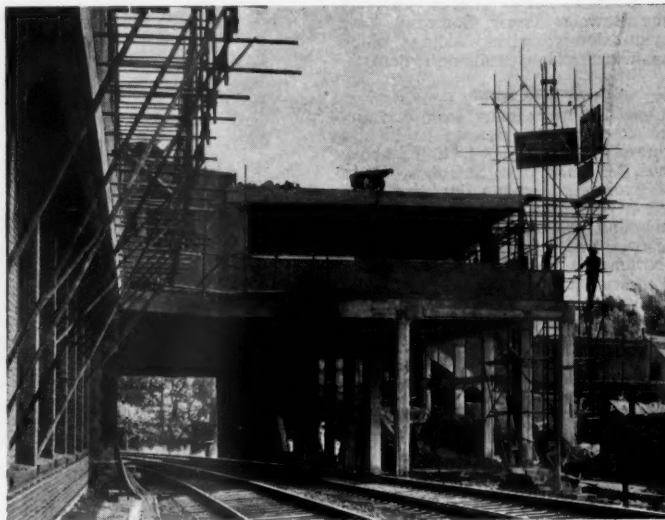
The stadium authorities have constructed a new road, called Stadium Avenue, a fine tree-lined concrete thoroughfare which runs in a straight line between the junction of Bridge Road and Wembley Park Drive and the stadium itself. This road is connected by a new 15-ft. wide subway to the new ticket hall which is being built by London Transport.

Over 40 ft. wide and 100 ft. long, this new ticket hall is being completed over the Eastern Region track adjoining the existing station, and will be connected directly with all six platforms by means of a new walkway, footbridge, and staircases.

At present, passengers leaving the station crowd Bridge Road as they move towards the stadium, necessitating a diversion of traffic, but when the new ticket hall and subway come into use, this diversion will cease and all stadium passengers will be directed via the new subway to Stadium Avenue.

The work, in which the Chief Engineer's Department of London Transport has co-operated with the council in matters affect-

ing the reconstruction of the bridge, to ensure minimum interference with railway traffic during the work, forms the first stage in the future reconstruction of Wembley Park Station, and the improved facilities to be brought into use for the Olympic Games will be permanently available for all future important events at the stadium.



*The new booking hall spanning the Eastern Region tracks*



*General view of station looking north. New footbridge in background*

**METAL ELECTRODE POWDERS.**—A folder issued by Murex Limited, Rainham, Essex, and available in English, French, or Spanish, contains a list of metal powders for electrode coatings. Most of these are required in 60-150 mesh, though there may be some specifications stipulating definite proportions of the finer or coarser ends of the range, and included in this latest list are standard and refined grades of ferromanganese for use as a deoxidant and for rendering sulphur innocuous; manganese metal for use where a minimum of iron is permissible; various grades of ferro-silicon, tungsten metal powder and tungsten car-

bide; and chromium metal for resistance to wear and for the correction of chromium losses from core wire in stainless-steel electrodes.

**WARWICKSHIRE ROAD BRIDGE CONTRACT.**—On behalf of the Ministry of Transport, a contract for the reconstruction of bridge No. 24 carrying the London—Coventry road over the Whitacre to Hampton-in-Arden branch railway at Stonebridge, Warwickshire, has been placed by the London Midland Region of British Railways, with Leonard Fairclough Limited, of Adlington, Lancs. The present cast-iron girder bridge

with stone abutments, which was built to span two railway tracks, will be demolished, and a steel and concrete structure of greater strength will be erected over the single railway track now in use. The new bridge will be of the single-span type, supported at each end on new concrete abutments faced with brickwork. The deck, which has been specially designed to carry heavy loads, will consist of rolled-steel joists encased in concrete, and will have a total width of 35 ft. 3 in. The reconstruction of this bridge will be carried out on one side of the carriageway at a time.

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## RAILWAY NEWS SECTION

## PERSONAL

## PORT OF LONDON AUTHORITY GENERAL MANAGER

The Port of London Authority announces that Mr. T. Williams, General Manager, will retire on November 1 next, and will be succeeded by Mr. Leslie E. Ford, at present Chief Docks Manager, Western Region, British Railways.

The Minister of Transport has appointed Sir Alan Rae Smith and Sir Harold Barton to be the auditors of the accounts of the British Transport Commission for the year ending December 31, 1948. Sir Alan Rae Smith is a Partner in Deloitte, Plender, Griffiths & Company, and was from 1939 Financial Adviser successively to the Ministries of Shipping, War Transport and Transport. Sir Harold Barton is Senior Partner in Barton, Mayhew & Company, and was President of the Institute of Chartered Accountants in 1944-45.

Mr. S. Williams has been appointed Signal & Telecommunications Engineer, London Midland Region, British Railways, in succession to Mr. W. Wood, retired.

Mr. S. H. Bingham, Commissioner of the Board of Transportation of the City of New York, expects to visit England for the month of August.

The British Ambassador to France on July 13 presented the King's Medal for Service to the Allied Cause to Mr. M. Lemaire, General Manager, Mr. J. Goursat, Honorary General Manager, and Mr. Merlin, Chief Engineer, Eastern Region, French National Railways.

Mr. R. J. Hunt has become Deputy-Chairman of Ransomes, Sims & Jefferies Limited. Mr. J. C. Horsley has tendered his resignation as an Executive Director, but will remain a Board Director. Mr. G. B. W. Scholefield has joined the board and been appointed an Executive Director of Ransomes, Sims & Jefferies Limited in charge of export sales.

## HOTELS EXECUTIVE

With the approval of the British Transport Commission, the following appointments have been made to the Hotels Executive:—

Mr. W. H. Johnson (Secretary, London & North Eastern Railway Company) to be Acting Secretary.

Mr. T. H. Baker, hitherto Assistant (Goods) to Chief Commercial Manager, London Midland Region, British Railways, to be Assistant Secretary.

Mr. J. G. Norton (hitherto Secretary, Railways Staff Conference) to be Chief Personnel Officer.

Mr. A. R. d'A. Mount (hitherto Assistant for Control, British Railways Hotel Services, London Midland Region) to be Chief Financial Officer.

Mr. Leslie E. Ford, O.B.E., M.Inst.T., at present Chief Docks Manager, Western Region, British Railways, who has been appointed General Manager of the Port of London Authority from November 1 next, joined the Cardiff Divisional Superintendent's Office of the Great Western Railway in 1912. From 1914 to 1919 he served first with the Welch Regiment, then with the 2nd Battalion, Monmouthshire Regiment, to which he was com-

Manager's Office as Principal Assistant (subsequently re-styled Assistant Chief Docks Manager). He was appointed Chief Docks Manager on January 1, 1945. Mr. Ford is a Brunel Medallist (University of London). He was made an O.B.E. in the King's Birthday Honours List, 1945.

Mr. John E. L. Duquet, K.C., has been appointed to the board of the Montreal Locomotive Works Limited, in place of the late Colonel the Hon. J. L. Ralston.



Mr. Leslie E. Ford

Chief Docks Manager, Western Region, British Railways; appointed General Manager, Port of London Authority, from November 1

missioned in 1915. Mr. Ford returned to the G.W.R., and held various posts from 1919 to 1921 in the Traffic Department, London Division, in the offices of the Superintendent of the Line and the District Goods Manager, Birmingham, and at stations in that district. He was included in the first quota of "special trainees" selected in the latter year. In 1923 he was appointed Personal Clerk to Sir Felix Pole (then General Manager); in December of the same year he was transferred to the Docks Department and attached to the Chief Docks Manager's Office in charge of the New Works Section. In 1926 Mr. Ford was promoted to be Outdoor Cargo Assistant to the Docks Manager, Cardiff, and in 1928, Assistant-in-Charge, Penarth Docks. He went to Swansea as Assistant Docks Manager in 1929 and was promoted Dock Manager, Port Talbot, in 1933. In 1938 he was appointed Dock Manager, Cardiff & Penarth Docks, which position he held for a year before returning to the Chief Docks

The following appointments of officers of the British Non-Ferrous Metals Federation have been made for 1948-49:—President: Dr. Horace W. Clarke; Vice-Presidents: Mr. W. J. Terry, Mr. W. H. Henman and Mr. H. E. Jackson; Treasurer: Mr. A. L. Johnson; Chairman of the executive committee: Dr. Horace W. Clarke.

Mr. J. R. Naisby, hitherto Director, Publicity & Travel Bureau, South Africa House, London, who, consequent on a re-organisation (to which reference is made in an editorial note in this issue), has been redesignated Commercial Representative, South African Railways, South Africa House, London, entered South African Railways service in 1915 as a clerk in the Rolling Stock Section, Assistant General Manager's Office, Johannesburg. He proceeded to France on active service with the First South African Infantry Brigade in 1917, and returned to civil duty in 1919, after having been wounded and held as a prisoner of war for eight months. Three years later he joined the Expenditure Section at headquarters, and in 1928 was transferred to the then newly-formed Tourist Department. Later in that year he went to the London Bureau, but returned to South Africa in 1935 to serve for one year more in the Publicity & Travel Department before taking up an appointment in the office of the Minister of Railways & Har-

bours which he retained until 1937. During that period he proceeded as Secretary to the committee of senior officers which visited the Continent of Europe, Great Britain and America to investigate railway practice and procedure. From 1937 Mr. Naisby was on the General Manager's Parliamentary staff until in 1944 he was appointed Director, Publicity & Travel Bureau, London.

Mr. Albert Edwin Roberts, who, as recorded in our June 25 issue, has retired from the position of Rolling Stock Engineer, Electrical Engineer's Department, Southern Region, British Railways, was born on January 22, 1883. He was apprenticed to Clay Bros. & Co. Ltd., Cardiff, from 1897 to 1900, and then served for a year on the staff of the British Thomson-Houston Co. Ltd. In 1901 he joined the British Westinghouse Electric & Manufacturing Co. Ltd., and was associated with the equipment of tramways and of rolling stock for the Metropolitan Railway. Five





**Mr. J. R. Naisby**

Appointed Commercial Representative, South African Railways, South Africa House, London

years later, Mr. Roberts joined the Metropolitan Railway and was in charge of electric rolling stock and locomotives from the experimental running stage to that of successful operating. He entered the service of the London & South Western Railway in 1913 as Repair Shop Engineer at

Durnsford Road, and in 1925 was appointed Rolling Stock Engineer on the staff of the Electrical Engineer, Southern Railway.

Mr. R. B. Deeley has been appointed a Director of Lightalloys Limited.

A sub-centre of the South Africa Centre of the Institute of Transport has been formed in Rhodesia, with Sir Arthur Griffin (General Manager, Rhodesia Railways) as Chairman.

Major R. R. Stephens, late R.E.M.E., has joined the Monarch Controller Co. Ltd. as Technical Adviser. He recently returned from Egypt, where he has spent many years as Locomotive Superintendent on the State Railways. Major Stephens served a pupilage with the Isca Foundry Co. Ltd. and later with the London Graving Dock Co., Ltd. before going to sea and obtaining the Board of Trade certificate for marine engineers. He later joined the Furness Railway under Mr. William Pettigrew, Chief Mechanical Engineer, where he was given charge of locomotive running and repairs, lake steamers repairs, dock machinery, dredgers, and all floating plant. During the 1914-18 war he served as Engineer Officer, R.N.R., Dardanelles, and elsewhere, and later was seconded to the Ministry of Munitions as Chief Visiting Engineer for railway plant and material. On demobilisation he returned to the Furness Railway; and his services were lent to the Chief Engineer, L.N.W.R., to superintend the building of two steam-



**Mr. A. E. Roberts**

Rolling Stock Engineer, Electrical Engineer's Department, Southern Railway, and Southern Region, British Railways, 1925-48

ships at Robb's Shipyard at Leith. Major Stephens resigned from the L.M.S.R. on appointment as Locomotive Superintendent, Egyptian State Railways. On the outbreak of the recent war he joined H.M. Forces in Egypt; he was mentioned in despatches in 1941.

## Visit of Sir Cyril Hurcomb to the Eastern Region



*A group including Sir Cyril Hurcomb, Chairman, British Transport Commission, Mr. J. H. Brebner, Chief Public Relations & Publicity Officer to the Commission, and Mr. David Blee, Member, Railway Executive, during their recent visit to the Eastern Region, with Mr. C. K. Bird, Chief Regional Officer, and other officers of the region*

*Back row (left to right).—Messrs. A. Moss (Signal & Telecommunications Engineer), George Dow (Press Relations Officer, Eastern & N.E. Regions), H. C. Johnson (Operating Superintendent, Western Section), G. A. Musgrave (Locomotive Running Superintendent, Western Section), R. B. Temple (District Goods Manager, Sheffield), K. B. Turner (District Engineer, Sheffield), F. W. Wheddon (District Passenger Manager, Manchester), S. B. Lovegrove (Assistant District Superintendent, Manchester), E. H. Baker (District Locomotive Superintendent, Gorton), W. E. Blakey (Assistant Commercial Superintendent)*  
*Front row (left to right).—Messrs. J. I. Campbell (Civil Engineer), A. H. Peppercorn (Chief Mechanical Engineer, Eastern & N.E. Regions), Sir Cyril Hurcomb, Messrs. C. K. Bird, David Blee, J. H. Brebner, H. H. Swift (Electrical Engineer, Eastern & N.E. Regions)*

## Ministry of Transport Accident Report

Goswick, L.N.E.R.: October 26, 1947

Colonel A. C. Trench opened the inquiry, continued later by Lt.-Colonel G. R. S. Wilson, into the accident which occurred at Goswick, on the then L.N.E.R. Berwick-Newcastle line, at 12.47 p.m. on Sunday, October 26, 1947. The 11.15 a.m. express, Edinburgh to Kings Cross, composed of 15 bogie coaches drawn by "A3" class, 4-6-2 locomotive No. 66, *Merry Hampton*, was derailed while traversing at high speed the up main to up independent connection, the diversion being necessitated by engineering works. The train was nearly full, carrying some 420 passengers, of which 27 and a train attendant lost their lives. Serious injuries, necessitating detention in hospital, were sustained by 59 passengers and 6 of the railway staff including the driver and fireman. A naval rating, travelling on the engine without authority, also was detained in hospital. A further 25 passengers and three of the staff were treated but not detained.

The engine and eight of the leading nine coaches went down the low bank into a

1,300 yd., 100 yd. before the overbridge. It was clearly visible through the bridge against a sky background; and about 50 yd. in rear of the bridge the starting signals could be so seen. The "on" position of home and starting signals could be distinguished at 1,190 and 1,434 yd. respectively, or even shortly before, and they remained clearly visible until passed.

From the fireman's (left-hand) side the distant at "caution" could be seen at about 800 yd., and rather more clearly than from the right. The view of the home signal was practically the same as that obtained by the driver, but the starting signals became hidden by the boiler at 800 yd. and were seen again only at 150 yd.

### View from the Signal Box

From the north window of the signal box the view of the line in the level country is uninterrupted for 1,456 yd. to the overbridge, and is scarcely less good from the centre of the box, where the signalman,

engine bogie, showing that the engine had been derailed before this point. Immediately after the accident the regulator was found to be shut, reversing indicator at about 20 per cent. forward cut-off, and the brake handle just off full "on." The blower was on. No defect in the engine was found.

### The Course of Events

Renewal of some bridges south of Goswick had been planned for October 19, involving diversion of traffic over the independent lines. This had to be postponed and was not included in the North Eastern Area fortnightly notices for October 18 to 31, but the postponement was not in time for the work to be deleted from the corresponding Scottish Area notices, in which it had been included for the information of crews working south. The engines of the train in question were from Haymarket shed, and the guard from Waverley Station.

It was decided subsequently to carry out the work on October 26, and the station-master, duly notified, made arrangements for traffic to be diverted to the independent lines from 7.30 a.m. to 1 p.m. A notice of the diversion was posted on the previous

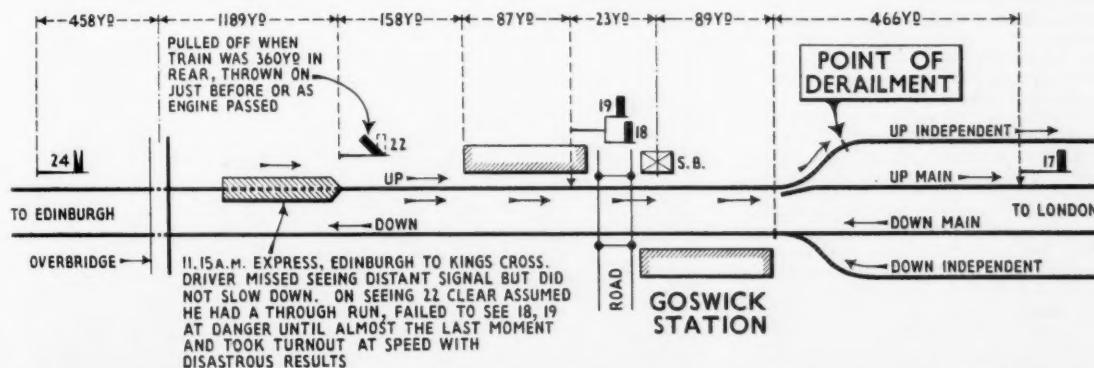


Diagram illustrating circumstances attending the derailment at Goswick, L.N.E.R., October 26, 1947

ditch; the last six coaches remained upright and in line, the last four of them not being derailed. The fourth coach, the leading member of a triple articulated set, broke away and apparently slid 70 yd. beyond the engine, coming to rest across the up line and fouling the down main. Six coaches were wrecked and four badly damaged.

Prompt measures were taken to obtain assistance. The weather was fine and clear. The accompanying plan shows the principal facts essential to an understanding of the circumstances of the accident.

### View of the Signals

Two runs were made from Scremerston to Goswick at slow speed to ascertain what view was obtained of the signals from an engine of the "A3" class, after doing so from an express.

From the driver's seat, on the right, looking through the cab side window, it was just possible for an observer unacquainted with the locality to distinguish the distant signal at "caution" at about 700 yd., with its arm just clear above the telegraph wires, although a driver said he could do so 200 yd. further back. At 350-400 yd. the view could hardly have been bettered. The signal became hidden by the smokebox at about 40 yd.

The home signal first came into view at

sitting in a chair, watched the express approach. Smoke and steam from up trains can be seen before they reach the overbridge, but a train remains hidden until it comes through, after which it can be seen clearly all the way to the box. An express was observed approaching at 60-65 m.p.h. and, the view being practically end on, it was found not easy to judge how fast it was travelling or its exact location as it approached the home signal.

### Condition of Track and Locomotive

The 95-lb. British Standard turnout was in good condition, and inspection three days before the derailment showed everything to be in order. The right-handed curve entering the station ends a short distance north of the turnout, and cant is still being run out at the points to the extent of about 2 in. to 1½ in. on the up main, giving negative cant to the contrary curve of the turnout. The Engineer of the L.N.E.R. considered that a safe speed through the turnout would be 15 to 20 m.p.h.

Abnormal lateral thrust at the reverse curve, after passing through the turnout itself, is considered to have caused displacement of the track and possibly also widening of the gauge, and thus to have initiated the derailment. Point rodding crossing all tracks about 40 yd. beyond the south end of the turnout was found on the

morning among the late notices at Haymarket and in the guards' room at Waverley.

As soon as the signalman, a relief man, who came on duty at 6 a.m. had advice that the gang was ready to start work, he set the road to the up independent, bolted the points, and put a collar on the point lever. He was quite certain that the repeater of the up distant showed it to be at "caution" at this time.

He dealt with five up goods trains after this, and said he kept the home signal at "danger" until the train had nearly stopped and then cleared it to allow it to draw forward to the starting signals, when he would clear the starting for crossing to the independent line and show a green flag. He was thus applying the provisions of Rule 39 (a) at the home signal on his own account, although under the Block Telegraph Regulations he was entitled to clear home and starting signals on receipt of "line clear."

According to his account he endeavoured to apply this procedure to the express, for which he received "entering section" at 12.45 p.m. Shortly afterwards he saw some steam from the engine as it came through the bridge and thought it was blowing off, as he had often noticed before, and he assumed the driver was slowing down in obedience to the distant.

He cleared the home signal when the train was, as he estimated, 200 yd. in rear, according to his original evidence, but he amended this figure to 360 yd. after a test from the box, in which he took part, and measurement on the ground. Just before the engine reached the signal he realised it was still steaming, threw the home signal to "danger," worked the detonator plunger, and stood at the window with his hands gesticulating for the train to stop, but it passed at about 60 m.p.h., fired the detonator, and became derailed at the reverse curve of the turnout.

He did not think the brake was on when the engine passed, but that the regulator was closed between the home signal and the box. He emphatically denied having cleared the starting signal, remaining unshaken on this point when confronted with the driver's statement that one or other of the starting signals was clear when he first saw them.

A lengthman confirmed this evidence and said he was having his dinner in the box when the signalman exclaimed that the train would not pull up. He thought the train was travelling very fast, steaming as it passed the up platform, and that the brakes were applied only at the box.

The stationmaster was off duty after 11 a.m. until informed of the accident, but what he found on reaching the site was in accordance with the signalman's evidence, while the driver of a goods train which preceded the express said the home signal was not cleared for him until he was close to it and that he was nearly stopped at the starting signal, where he whistled. The distant he had found definitely at "caution," with no sign of upward inclination of the arm.

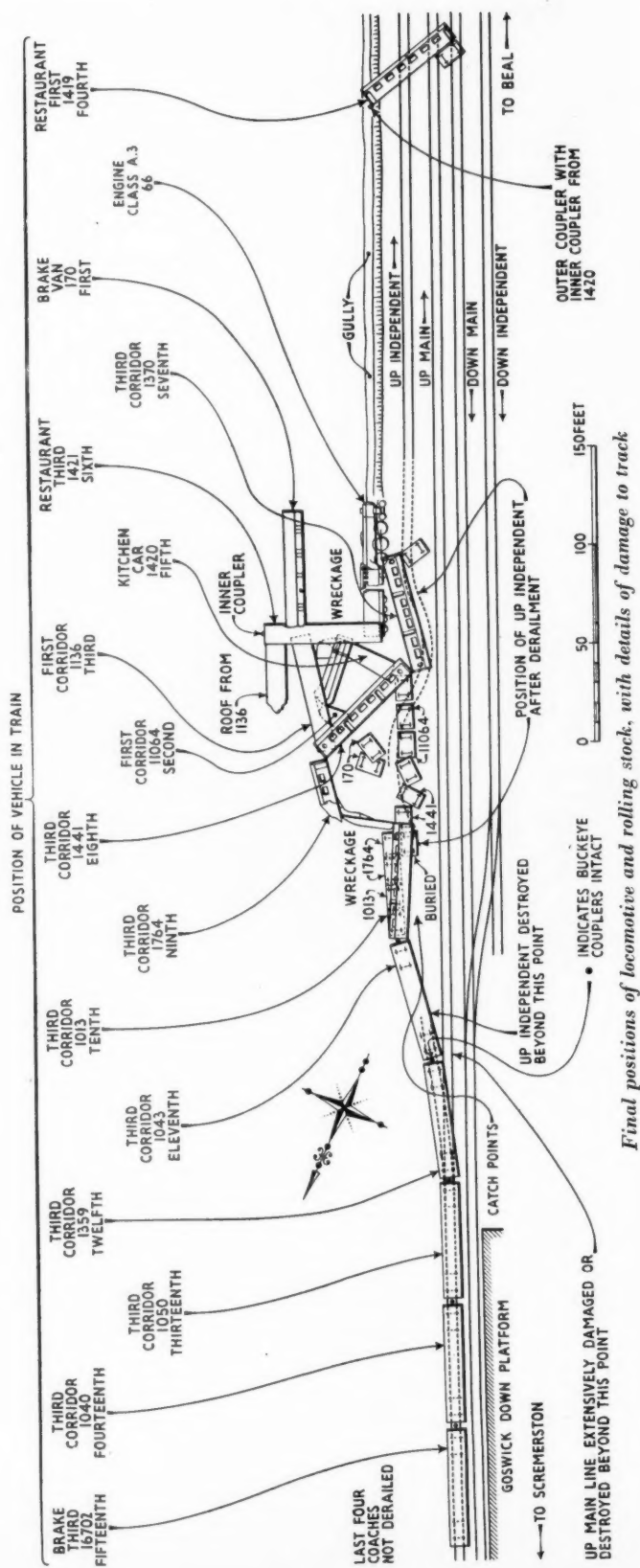
The enginemens of the express were both severely injured and spent a long time in hospital, being unable to give evidence to an Inspecting Officer until February 5. The driver, a man of long experience, in charge of Edinburgh-Newcastle expresses for 12 years, explained how he came, after some hesitation, to allow the naval rating to ride with him. After signing on he took plenty of time to study the notices, but did not see the late one referring to the Goswick diversion. The fireman did not look at the notices, so neither was aware of it.

At Waverley he looked at his Scottish Area notice and noted that there was single-line working between Drem and East Fortune. This notice, as already explained, had reference to a diversion at Goswick on October 19 but not on October 26. Speed at Scremerston was 60-65 m.p.h. He was looking out in the usual way, but did not see the arm of the Goswick distant, obscured by smoke and steam, though he caught sight of the foot of the post. He therefore shut off steam but did not apply the brake, as he saw the home signal at "clear" just before reaching the overbridge, so he assumed he had a clear run through on the main line.

He could have stopped at the home without difficulty. The home remained at "clear" until after he passed it, and not until then did he see the starting signals. He suggested that one—he could not remember which—was at "clear" and was thrown to "danger" in his face.

He thus contended that he had shut off steam and then been misled by the clear home signal. He had been diverted many times, but invariably the home had not been lowered until he was close to it.

It appeared, however, that he made no attempt to view the distant by crossing the footplate, nor did he ask the fireman to





observe it, saying the latter was firing at the time. Putting on the blower failed to lift the exhaust steam clear.

He gave no satisfactory explanation of his failure to observe the starting signals until he was passing the home. He also said he had no conversation with the other man on the engine during the whole journey, who had been "over on the fireman's side" nearly all the time.

The fireman had been with the driver regularly for 12 months. He made statements at various times in hospital, to the police, at the inquest, and to the Inspecting Officers, but contradicted himself on some points in the course of them, especially on the matter of examining notices before starting. He finally said that he saw none, being late signing on. He started firing again at Tweedmouth and thought he was so engaged until within 30 or 40 yd. from the home signal, which was clear until they passed it, and immediately after that the driver applied the brake.

At first he said the driver closed the regulator "a second or two earlier," but

paid no special attention to the running at Goswick, where he thought the speed on approach was over 60 m.p.h. He did not observe any of the signals. He was confident there was no brake application before the sudden stoppage. The brake had worked satisfactorily on three occasions during the journey. This evidence was supported by a ticket collector and three of the dining car staff.

#### Issue of Notices

The report gives the text of the original notice for October 19, which was deleted from the North Eastern Area notices but not from those of the Scottish Area, together with the alteration covering October 26, to be inserted in the latter, which was acknowledged by the Goswick stationmaster but not by the other officers to whom it was addressed. (It was not the practice to expect such acknowledgment from them.)

For some reason, impossible to discover, the notice of the alteration, despatched to Edinburgh from the Divisional Superintendent, Newcastle, by railway letter ser-

it appears to have been the rule to substitute typing for pencil at the earliest opportunity.

The driver, referring to his failure to see the pencilled Goswick notice, said there were no engineering notices in the original "48-hour" case, where he expected to find them, but could not explain how he came to miss it in the new case facing the window, which he studied with care. He was not rushed in any way.

It appeared that enginemens were not notified officially of the change in position of the "48-hour" notices about six weeks before, but the foreman thought that this had been understood generally for some time.

Inspection of the notice arrangements at the Waverley guards' depot showed that late engineering works notices and certain others were in spring clips on a board, and that the lighting by a single bulb hung from the ceiling was not good. There was satisfactory evidence that the pencilled notice was posted in the appropriate clip with two others. It was there after the accident. There may have been a dozen or so notices there as well; some may have been obsolete. The guard said he looked through this clip before signing on and turned the notices over, but he could not recollect one referring to Goswick. He admitted that he might have missed it.

A new case for the "48-hour" notices has now been provided at Haymarket, duly so labelled, and in this notices remain for 48 hr. only. If still valid they are then transferred to the appropriate case and an index of the transfers is displayed in the "48-hour" case. Arrangements have been made for all notices to be removed directly they become obsolete, and the typing of them, wherever practicable, to be enforced strictly. Similar improvements, including the provision of a specially lighted glass-fronted case, have been carried out at Waverley. Clips have been abolished and notices are no longer superimposed.

#### Inspecting Officers' Conclusion

There was no defect in the permanent way or the locomotive. The distant signal was correctly at "caution" and the up main starting signal at "danger" throughout the morning. The signalman admitted that he had misjudged the speed of the train. Assuming it was slowing down, he cleared the home signal when it was about 360 yd. away, replacing it, as soon as he realised the speed, before or as the engine passed it. He was quite definite that he never cleared the up independent starting signal. His evidence was impressive and his frank statements should be accepted.

His replacement of the home signal may have been only just as the engine passed it, although he said he saw the arm at "danger" against the steam; and the driver is entitled to the benefit of the doubt as to whether the replacement was reasonably visible to him.

The driver admittedly failed to see the distant and made no attempt to ascertain whether it was visible from the other side (as it probably was). He should have assumed it to be at "caution." He did not reduce speed appreciably, and on approaching the home, by that time "off," assumed he had a clear road, despite the fact that the starting signals must have been visible at approximately the same time; and it is certain that the up main starting signal was "on." The only one he could have seen at clear (even if the signalman's evidence be discredited) was



*Aerial view of the wreckage after the derailment at Goswick*

later that the two operations were not nearly so simultaneous. The regulator had been closed just before reaching the home signal, which caused him to stop firing and get up into his seat. He was sure that the passenger was standing behind the driver all the way from Berwick and had had no conversation with him save for a few moments at Drem.

This man, a leading stoker in the Navy, had been employed by the railway before joining up in 1941. He had applied before the accident to be taken on again on his discharge, but had received no promise. He asked the driver, on his own initiative, to take him for a trip. The driver was reluctant at first but afterwards consented. He said he had a few brief conversations with the fireman but none with the driver, behind whom he stood from Berwick onwards. He could give no useful evidence regarding the driver's actions.

The guard, although he looked at the notices at Waverley, failed to see the supplementary one regarding change of date for the traffic diversion to October 26, and

vice on October 23, was not received until the morning of October 25. It was immediately telegraphed at about 9.50 a.m. to the Haymarket and St. Margaret's shedmasters and the Waverley stationmaster. The notices posted in consequence were in pencil, with no conspicuous heading.

The report describes the arrangements existing at Haymarket shed for the display of notices, and the rearrangement effected about six weeks before the accident, during which time all notices, including "48-hour" ones, were displayed in the new case. No notices were superimposed. Prior to this the "48-hour" notices had been posted in a case to the right of the signing or put-on window.

The foreman said the time clerk wrote out the pencilled notice at about 11.30 a.m. This was not typed because the office staff was just going off duty. (The District Locomotive Superintendent saw no reason for not typing it; the staff did not leave duty until noon.)

There were probably several pencilled notices in the case, some of which might have been there for some time, although

the up independent, clearly indicating a low-speed diversion. He could not have seen the up main advanced starting signal and had no grounds for assuming it also to be clear.

The statements of the engine crew were at times conflicting and unsatisfactory. Less weight can be attached to them than to those of the signalman, although it is proper to bear in mind the shock the driver sustained through his injuries.

It further appears most unlikely that, if he closed the regulator when he said he did (a point not supported by the fireman and definitely contradicted by the signalman and lengthman who was in the box), steam and smoke blowing down would have prevented him from seeing the home and starting signals from the overbridge, or even north thereof, at which time it is reasonably certain that neither of them had been cleared.

He did not exercise reasonable and proper caution until he was in position to be certain that all the Goswick signals were "off." The main responsibility therefore rests on him. Although there is no evidence to confirm it, it is felt that his grave breach of discipline in taking an unauthorised passenger on the footplate may well have had some bearing on his failure. He is 59, with a fairly good driving record of 28 years and a clear one for the last four years.

Contributory causes were the failure of driver, fireman, and guard to see the notices. The change of location of engine-men's late notices is an inadequate excuse for the driver's failure, and again it is inevitable that the question should arise as to whether he was not so preoccupied with taking the passenger with him as to preclude normal attention to duty in this respect. The fireman contradicted himself on the question of having seen the notices, and the guard said he looked but did not see the one in question. In extenuation it can only be said that the arrangements for the display of the guards' notices were somewhat primitive and not such as to facilitate rapid absorption of relevant information.

It is difficult to criticise the signalman for misjudgment in the exercise of an additional precaution taken on his own initiative.

#### Recommendations and Remarks

With regard to the application of Rule 39 (a), reference should be made to Sir Alan Mount's report on the derailment at Bourne End on September 30, 1945, in which it was recommended that consideration should be given to "retarding the clearance of stop signals when a slow speed diversion is required from a high speed route, to apply to a train following its regular booked route as well as to that diverted out of course."

Replying on behalf of all the companies, the Railway Clearing House, under date of December 8, 1947, said that while it could be adopted in certain cases "this principle could not be universally applied without detriment to the operation of the railways, having regard to the working of heavy freight trains and the incidence of gradients."

After Bourne End, the L.M.S.R. issued instructions to ensure this principle being applied to the stop signals for other than regular booked movements over a low speed junction, and as a result of Goswick the L.N.E.R. did so too.

In all probability the accident would not have occurred if driver, guard, or possibly the fireman had seen the notices, the conditions of display of which have been dealt with; since the accident there has

been much discussion on them and their adequacy.

A driver's obedience to signals is fundamental to safety, and the issue of prior notices (when possible) can be regarded only as an additional help to train crews, not a primary safeguard. This point arose in connection with the Haywards Heath accident of September, 1945, the report on which emphasised it and said: "A driver's obedience to signals must be the first line of defence against accidents; this should be reinforced wherever possible by warning notices of abnormal operation to drivers and guards. . . ."

There was much room for improvement in the Edinburgh arrangements for ensuring that men were informed beforehand of pre-arranged diversions and stops. The typography of the fortnightly notices is satisfactory, and arrangements for collecting straightforward, but it must frequently happen that arrangements of equal importance are too late for inclusion, and in respect of them there appears to be scope for improvement.

Such notices should be displayed clearly always on one particular board (not in a clip) labelled "Late Notices" or something similar, conveniently located, and adequately lit. To facilitate quick reference every notice should be typed and *always* headed in block letters by the names of the place concerned and days of the week and dates on which it is in force. Out-of-date notices should be removed without delay.

The Railway Executive should give urgent consideration to the general application in all Regions of similar standards of display, particularly desirable in view of the increasing number of speed restrictions which must become necessary in the near future.

Several persons have suggested that where, owing to pre-arranged works, trains are to be diverted from their normal tracks, a flagman with detonators, as in fog, should be at the distant signal. This is a plausible suggestion and almost certainly would have prevented this accident, but it would appear undesirable to allow drivers to have the impression that they can rely on getting a detonator at any distant unusually at "caution." It happens frequently that diversions and stops have to be made at short or momentary notice, with little or no possibility of arranging for a flagman. The fundamental importance of obedience to signals is again relevant.

This is emphatically a case which draws attention to the value of warning automatic train control. After Bourne End, Sir Alan Mount recommended that the companies be asked to review the question of introducing it, and the reply of the Clearing House referred to the system in use generally on the Great Western Railway, and experiments in hand by two other companies. It pointed out that, "apart from the question of finance, the general installation of automatic train control, even of the warning type, on main lines where this does not already exist, would occupy a considerable time and employ a large number of skilled men. The supply of such staff is strictly limited, and its employment on this installation would therefore necessarily delay the execution of other work such as the modernisation of signalling, the extension of track-circuiting, and other similar works."

This deplorable accident, however, again suggests that this should be accorded high priority, and emphasises the need for a review in order that design may be agreed and a general programme prepared, for initiation as soon as circumstances will permit.

## Railway Arrangements for the Inverness Highland & Agricultural Show

The first post-war Show under the aegis of the Highland & Agricultural Society of Scotland, was held at Bught Park, Inverness, from June 22 to 25 and, although only a few months had elapsed since the decision to resume this event, the heavy demand on railway resources was met adequately. Preliminary arrangements opened in March, with the selection of road routes for the conveyance of rail-borne traffic between the station and show-ground, 1½ miles distant, to obviate congestion.

Other problems dealt with at that time included the estimation of cartage strength necessary, railway accommodation on the showground, the storage of empty passenger and freight vehicles, and many other miscellaneous requirements.

The actual preparation of the Show commenced in May, with the delivery of 4,100 sleepers by British Railways, as a perimeter track round the ground, and 81 wagons of timber for the erection of stands and so on. On June 7 delivery of exhibits and sundry material started from the station, and from that date the traffic flow was maintained with such regularity that the opening day saw a complete clearance effected.

The extent of the work involved is revealed by the fact that the contents of 600 rail wagons and over 300 animals of all kinds required transfer to road vehicles, for subsequent conveyance to sites within the showground. Included in this volume were one hundred railway containers, nearly 700 agricultural implements, and 1,400 packages of sundry goods, with a combined weight for passenger and freight rated traffic of almost 1,500 tons.

During the period of the Show, special passenger-train services to Inverness were arranged from all parts of Scotland, culminating in 21 extra trains on Thursday, June 24, when their Majesties the King and Queen with Her Royal Highness Princess Margaret visited the Show. On this occasion His Majesty conferred the right to style future similar events as The Royal Highland Show.

Attendance figures, totalling over 87,000 (the previous total for Inverness being 28,600 in 1932) stress the growing interest evinced by the general public in the event, more particularly in the light of the population paucity in the location area. The close of the Show on June 25 brought a further period of pressure, in the despatch of six special livestock trains between 7.30 and 10 that night, and four special freight trains with exhibits on June 26 and 27 to the Royal Show opening on July 1 at York.

**HIGH-PRESSURE WASHING BOILER SUPER-HEATERS.**—It is reported by the London Midland Region of British Railways that good results have accrued from the adoption of high-pressure water-washing of the external surfaces of boiler superheaters at Stonebridge Park, London, generating station. By this method, two men can thoroughly clean down the apparatus in four days, whereas, previously, three men using hand scrapers took 21 days. Not only is the new method less costly, but it also results in an improved boiler performance, due to the better heat transmission afforded by the cleaner tubes and to the slower rate of build-up of fly ash, which enables the boilers to be kept in steam for longer spells between cleaning.



## London Railway Terminals and Freight Traffic

*A two-level station at Liverpool Street and automatic tube railways for goods traffic are among the suggestions made by the Railway (London Plan) Committee's report*

The Final Report to the Minister of Transport, of the Railway (London Plan) Committee, which was published on July 6, examines the proposals in the County of London Plan for dealing with the railway terminals north of the Thames, other than those of the Southern Region, and for the handling of London's freight traffic. Suggestions made by the Committee include the building of a two-level station on the existing site at Liverpool Street as an alternative to moving the terminal further east.

Advising against the removal of Liverpool Street Station and the building of a new main-line passenger terminal at the site of Bishopsgate Goods Station, adjacent to the proposed "A" Ring Road, the Committee states that the volume of traffic dealt with during peak hours is greater than at any other London terminal station, and that, although many passengers change to other means of transport, the majority are in business within a short radius of the station.

### LIVERPOOL STREET RECONSTRUCTION

It was considered unnecessary to stress the inconvenience to City passengers that would be caused if their trains terminated at Bishopsgate. Moreover, the goods station would have to be moved, and it was not clear that a convenient alternative site could be found. Consequent to these reasons, it was not thought possible to justify the transfer of Liverpool Street Station. The Committee considers that planning requirements could be met by the reconstruction of Liverpool Street Station at two levels on the existing site, provided room could be found at the upper level for new public roads across part of the site, including a bus stand.

The remainder of the upper level would be used as a station concourse with appropriate passenger amenities, and on the lower level would be the rail tracks and platforms. However, the details of this alternative scheme have not been worked out, and, therefore, it was not possible to say whether it would be practicable; its adoption would be conditional on the elimination of steam working by electrification, or possibly by diesel or gas-turbine traction.

It is suggested that Fenchurch Street Station should be left on its present site, as setting it back to the proposed "A" Ring Road would cause inconvenience to the great majority of passengers and could not be justified. Nothing would be gained by reconstruction at a lower level, because it would be necessary to keep most of the existing approach viaduct to preserve rail access to various goods depots. As a result of overwhelming technical disadvantages, amalgamation of Euston and St. Pancras stations is not recommended, though the proposal to bring forward the frontage of Paddington Station to the projected "A" Ring Road at Sussex Gardens, is endorsed. The existing stations at Broad Street, St. Pancras, Euston, Kings Cross, and Marylebone, would be retained or reconstructed on their present sites.

Commenting on the proposals in the County of London Plan for handling freight traffic, the Report states that the railways are making detailed investigations of the problems involved, and meanwhile it would be premature to pass judgment

on the proposals, or to put forward alternatives. The only definite conclusion reached on the proposals is that the use of the northern section of the Inner Circle as a goods line for distribution in the Central Area cannot be recommended, as the proposals in the Committee's previous report require its retention for passenger traffic.

To make the best use of land in central areas it is suggested that some concentration of railway depots may be made possible by zonal schemes which are being worked out by the railways. Street cartage could be reduced by the construction of automatic tube railways for goods traffic, similar to that of the General Post Office, and the scheme is thought worthy of investigation.

The report points out that the detailed examination of technical possibilities and traffic needs, necessary before any programme of railway development could be put in hand, would take three to four years, and urges that this examination should be started as soon as possible. Deferment of the investigation might

result in the hurried adoption, at a later date, of schemes not properly co-ordinated with the planning and traffic needs of the area.

Members of the Committee, which was appointed in February, 1944, by the then Minister of War Transport, were: Sir Charles Inglis (Chairman); Mr. Geoffrey Crowther, Editor of *The Economist*; Mr. F. A. Harper, Mechanical Engineer (Electrical), London Midland Region, British Railways; Sir Eustace Missenden, Chairman, Railway Executive; Lt.-Col. Sir Alan Mount, Chief Inspecting Officer, Railways, Ministry of Transport; Sir George L. Pepler, Ministry of Town & Country Planning; Mr. J. C. L. Train, Member, Railway Executive; Mr. A. B. B. Valentine, Member of the London Transport Executive.

TELEPHONE EQUIPMENT FOR CREWE DIVISIONAL CONTROL OFFICE.—Modern telecommunication equipment is being manufactured at Coventry by the General Electric Co. Ltd. for installation in the control office of the Divisional Operating Manager at Crewe, L.M.R., which is being modernised in conformity with the re-equipment of control offices in England and Wales which was undertaken by the L.M.S.R. and described in our issue of May 9, 1947.

## Southampton War Memorial to Southern Staff

Mr. R. P. Biddle, Docks & Marine Manager, Southern Region, on July 4 unveiled at Southampton a memorial plaque to 43 men and women of the Southern Railway who lost their lives in the 1939-45 war. The plaque, placed at the entrance to Dock House, bears the names of those who were killed not only in the Services, but also in the docks during air raids. It is similar in design to the 1914-18 war memorial at the other side of the entrance.

In unveiling the plaque, Mr. Biddle recalled that it was nearly 27 years since the earlier memorial had been unveiled by the Docks & Marine Manager of the day, Mr. Gilbert S. Szlumper. They were now commemorating not only members of the Services, but those who, in carrying out

their civilian responsibilities, lost their lives during air raids, some of them only a few yards from where they were standing now. All had been imbued with the same spirit as had animated those who fell in the 1914-18 war. Concluding, Mr. Biddle said the 1914-18 war had been called "the war to end wars," but our hopes in that respect had not been realised. We spoke today of the "last war," and he hoped that we might not be disappointed in the same way again.

A service of dedication, attended by relatives and friends of those whose names appear on the memorial, and by representatives of the Docks & Marine Department and other bodies, was conducted by the Rev. D. Noel Thomas, Chaplain of the Missions to Seamen.



Mr. R. P. Biddle, Docks & Marine Manager, Southern Region, unveiling the memorial to Southern Railway staff. The 1914-18 war memorial is seen on the left



## Notes and News

**Draughtsman Required.**—A draughtsman, with knowledge of rolling stock, is required by a North Midland firm. See Official Notices on page 87.

**Radar on Humber Ferry Service.**—British Railways has installed radar on the paddle steamer *Tattershall Castle*, which operates the Humber ferry service, and the paddle steamer *Lincoln Castle*, on the same service is being equipped similarly. This service carries approximately 14 million passengers a year, in addition to motorcars, livestock, and parcels traffic, and is subject to interference by fog. It is to overcome this difficulty and to maintain an adequate and reliable ferry service under all conditions that radar has been installed.

**New Dictating Unit.**—The Recordon, a dictating unit which has been introduced by Thermionic Products Limited, was the subject of a demonstration at the Holborn Restaurant on July 8. The new machine is designed to assist business men faced with the secretarial staff problem and it records on a magnetically-coated paper disc, which can be demagnetised and used again for an indefinite number of recordings. When a recording has been made, it may be removed instantly and played back by the typist; alternatively, it may be filed, or folded and posted to another Recordon user. An erasing button enables the recorder to remove any errors he has made in dictation.

**Bell Punch Co. Ltd. 70th Anniversary.**—On Wednesday, July 7, the Chairman and Directors of the Bell Punch Co. Ltd. held a dinner at the Connaught Rooms, London, W.C.2, to celebrate the 70th anniversary of the incorporation of the company. Mr. Michael Moore, Chairman, presided. In presenting Mr. H. Drummond Black, the Managing Director, with some pieces of old silverware, he mentioned that Mr. Black had completed 50 years in the service of the company, and for 40 years had been its Managing Director. The products of the company were very diverse, and in some cases were being exported to the United States of America in competition with American goods of a similar kind. In his reply, Mr. Black traced the history of the company from its earliest days. After dealing with earlier developments he stated that there were a number of new models in the design or prototype stage. Mr. J. H. Condy proposed the toast of "the Guests," and Mr. G. F. Sinclair, C.B.E., Chief Technical Planning & Supplies Officer, London Transport Executive, replied.

**Audit of Accounts of British Transport Commission.**—The Minister of Transport has approved, under section 94 of the Transport Act, 1947, a scheme of audit of the accounts of the British Transport Commission. The scheme is published in full in the London, Edinburgh, and Belfast *Gazettes* of July 9, 1948. It makes provision with respect to the matters on which the auditors appointed by the Minister under the Act shall report. It also refers to the fact that the Commission has expressed its intention of appointing, so far as is practicable, professional auditors or firms of auditors to audit on its behalf the books and records of the Executives and departments of the Commission; and the scheme authorises the auditors appointed by the Minister to rely to the extent which is in their judgment reasonable on the audit carried out by

professional auditors appointed by the Commission. The Commission is required by the scheme to maintain proper systems of internal check, and, after consultation with the auditors approved by the Minister, to take steps to ensure the integration of the programmes of professional audit. Provision is also made for revocation or variation of the scheme. As recorded in our Personal columns, Sir Alan Rae Smith and Sir Harold Barton have been appointed by the Minister as auditors of the accounts for 1948.

**Unofficial Strike in Eire.**—Railway traffic in Southern Eire was brought almost to a standstill a fortnight ago by an unofficial strike of more than 300 drivers and firemen at Inchicore, near Dublin, after a driver and fireman had been dismissed on July 2 in consequence of a disagreement over hours worked. Normal services were maintained on the Midland and South-Eastern sections of C.I.E., but all traffic was dislocated on the Southern section. A settlement was reached in the dispute on July 4, and the men returned to work on the morning of July 5.

**Doncaster Railway Exhibition.**—An exhibition of locomotives and rolling stock will be held in the Plant Works of the Railway Executive, Kirk Street, Hexthorpe, Doncaster, on Saturday, July 17, and Sunday, July 18, from 10 a.m. to 6 p.m. The opening ceremony at 12 noon on July 17 will be performed by the Mayor of Doncaster, who will be received by Mr. L. Reeves, Mechanical Engineer (Doncaster); the Railway Queen and attendants will be present. Admission is 6d. for adults and 3d. for children, and the proceeds will be in aid of the Railway Benevolent Funds.

**Travel Association Report.**—In the 20th annual report of the Travel Association of Great Britain, it is stated that the setting up of the British Tourist & Holidays Board and the new relationship between the Board and the Association as its Tourist Division caused a falling off in revenue from certain interests. For this reason the report emphasises that the tourist industry as a whole benefits directly from the work of all Divisions of the Board. In 1947 the Association estimated that its required income for the year would be £300,000, the Board to provide £210,000 of this, leaving the Association to find £90,000 from its own resources. Actual revenue was £292,565, and of this amount £226,500 was contributed by the Board. Overseas publicity accounted for 75 per cent. of the expenditure, which, at £298,880, was £1,120 below the budget estimate.

**Crewe North Motive Power Depot.**—British Railways, London Midland Region, has placed contracts for a new electrically-operated coaling plant, ash-disposal plants, a turntable, and other equipment, in connection with the first stage of the modernisation of the motive power depot at Crewe North, one of the largest in the Region. Over 130 locomotives are stationed there and some 30 engines from other depots in the Region use Crewe North daily for refuelling and other servicing. The contract for the coaling plant, which will be of the wagon-hoist type, with a reinforced concrete bunker, capacity 200 tons, and capable of refuelling two locomotives with five tons of coal each in three min., has been placed with Henry Lees Limited, of Motherwell, Scotland. The same firm also will supply the two ash-disposal plants, each of which will be

of the automatically-operated skip hoist type, with overhead reinforced concrete bunker of 25 tons capacity. An order for a 70-ft. dia. turntable, with vacuum turning gear, has been placed with Cowans, Sheldon & Co. Ltd., of Carlisle.

**Institute of Directors.**—Plans for extending the activities of the Institute of Directors were explained by Major-General Sir Edward Spears, Chairman, at a meeting on July 1, when proposals were outlined for the establishment of a Parliamentary committee and the formation of a legal committee to scrutinise legislation. Speakers included Lord McGowan, Chairman of Imperial Chemical Industries, and Mr. Oliver Lyttleton, M.P., Chairman of Associated Electrical Industries.

**Road Accidents in May, 1948.**—The return issued by the Ministry of Transport of the number of persons reported to have died, or to have been injured, as a result of road accidents in Great Britain, during the month of May last, shows 301 deaths (compared with 398 in May, 1947), 2,328 seriously injured (compared with 3,383 in May, 1947), and 8,572 slightly injured (compared with 11,656). The fatalities during May (the last month before the introduction of the standard petrol ration), numbering 301, represent the lowest figure for May since monthly road accident statistics have been recorded.

**Railway Equipment Required in Mexico.**—Reuters reports that the Mexican railways are contemplating a modernisation programme calling, among other items, for about 150 locomotives, of which 75 per cent. are to be diesels; 2,000 wagons, and 100 passenger coaches. The programme also includes the construction of a new station in Mexico City. Further information may be obtained from Sr. Rudolfo Flores, Purchasing Agent, National Railways of Mexico, Bolivar 19, Mexico, D.F. Mexico; or Sr. Ing. Miguel Alvarez Gleason, Jefe de la Direccion de Control de Admisiones, Sria. de Bienes Nacionales e Inspeccion Administrativa, Mexico, D.F. Mexico.

**Experimental Fluorescent Lighting for Streatham Substation.**—The Southern Region has introduced recently an experimental fluorescent lighting installation at Streatham substation. This substation was selected for the trial as it is a windowless structure built to replace the original one, which was destroyed by enemy action during the recent war. The new lighting installation consists of 38 fluorescent tubes, arranged to give uniform illumination throughout the interior of the substation. The lamps run off the ordinary 50-cycle supply of electricity. The substation is equipped with rotating machinery, but no stroboscopic effect has been noticed with the fluorescent lighting.

**L.M.R. Track Renewal.**—Working in relays in a day and night operation lasting 48 hr., 250 men took up 220 yd. of L.M.R. double-track line, removed 2,400 tons of earth from between it, and then relayed the track on a new foundation of sand and clean ballast. To help them in this project, which took place between Bletchley and Wolverton on the main line from Euston, engineers used two bulldozers, four drag-line excavators, and a battery of arc-lights. The work, which started at 4 p.m. on Saturday, July 10, and finished on Monday, July 12, involved the complete renewal of the formation supporting the up and down fast lines at this point. The new formation has improved drainage and has raised the level of the tracks by 6 in. Additional work

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## OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

**DRAUGHTSMAN**, with knowledge of Rolling Stock, required for firm in North Midlands.—Reply to Box 116, *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

**OFFICIAL ADVERTISEMENTS** intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is 9.30 a.m. on the preceding Monday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

**BRITISH WORK ON PERSIAN RAILWAYS.** The achievements and difficulties of the R.E.s. during the 15 months in which they laid the foundation for effective aid to Russia. Reprinted from *The Railway Gazette*, February 2 and 16, 1945. Price 1s. Post free 1s. 2d.

was involved in building a special siding alongside the line to accommodate trains removing earth and bringing in sand and clean ballast. Lineside telegraph poles were taken down and the wires cabled clear of the work. During the renewal, main-line passenger trains were run over the parallel slow lines.

**Service Reductions in Australia.**—Reuters reported from Sydney on July 1 that the Victorian and New South Wales State cabinets had decided to eliminate special weekend trains and reduce railway services in general because of the lack of coal reserves due to recurrent strikes and shipping holdups through bad weather. Western Australia had cut general rail services by 50 per cent. previously.

**Lower Rates for Italian Exports.**—Reduced rates for export goods from Italy, which were suspended in 1946 because the railways could not afford them, have been restored, Reuters reports. Reductions of from 10 to 50 per cent., according to distance, have been granted for the transport of building materials, non-metallic minerals, pyrites, wines, and fruit destined for export by land. For goods to be exported by sea, tariff rates have been cut by 10, 20, and 30 per cent. for distances up to 50 km., from 51 to 200 km., and over 200 km. respectively.

**Increased Air Traffic in Scotland.**—At the end of May this year, the Scottish Division of the British European Airways Corporation had completed a full 12 months of working, enabling comparisons to be made with the previous year. During May there was a substantial increase in traffic, particularly in freight, mail, and excess baggage, which showed an increase of more than 50 per cent. on May, 1947. Miles flown increased from 225,140 to 239,209; passengers from 8,682 to 9,726; and freight, mail, and excess baggage from 101,269 lb. to 158,781 lb. For the whole year, the freight, mail, and excess baggage carried amounted to 1,481,563 lb., and the mileage flown to 2,929,986 miles.

**New Subway at Leicester Square Station.**—On July 5 London Transport brought into use at Leicester Square a new passenger subway, about 100 yd. long, linking the Northern and Piccadilly Lines. Previously interchange was by means of the original lift passages at the south end of the Northern Line platforms and the west end of the Piccadilly Line platforms. The new subway gives direct connection between the lower escalator chamber of the Piccadilly Line and both

**THE RAILWAY HANDBOOK** provides the railway student with a collection of useful statistics and information relating to the railways of Great Britain and Ireland. In addition, in matters of international interest, such as speed and electrification progress, the book extends its scope to cover the whole world in order to present a complete picture of these increasingly-important developments. 120 pp. Dy. 8vo. Paper covers. Price 5s. By post 5s. 3d.

**MECHANICAL APPLIANCES FOR HANDLING RAILWAY TRAFFIC.** By G. Bulkeley. An explanation of the employment of mechanical apparatus for handling and carting general goods. Cloth. 74 in. by 5 in. 132 pp. Illustrated. 5s. By post 5s. 3d.

**4-8-2 CLASS "15E" LOCOMOTIVES FOR THE SOUTH AFRICAN RAILWAYS.** The latest examples of these main-line passenger and freight locomotives have been built by the North British Locomotive Co. Ltd. Reprinted from *The Railway Gazette* of September 20, 1946. Price 2s. By post 2s. 2d.

Northern Line platforms, at a fairly central position. The work, which began in April, 1947, with the sinking of a 100-ft. deep working shaft from street level in Upper St. Martin's Lane (see our May 30, 1947, issue), has comprised not only the new subway but also the removal of part of the tunnel lining of the station tunnels of the Northern Line to give access to both platforms. Fluorescent lighting has been installed in the subway, but shortage of materials means that finishing work, such as decorative tiling, will have to be delayed until a later date.

**Issue of G.E.C. Results.**—A notice addressed to all stockholders of the General Electric Co. Ltd. recalls that under the new Companies Act, 1947, the main provisions of which came into force on July 1, the company is required to submit very detailed information to stockholders, including certain particulars in connection with its many subsidiary companies, both at home and overseas. This involves much additional work in the preparation of the accounts, with the result that the balance sheet and profit & loss account, usually issued in July, will not this year be available until October. The notice states also that the preliminary figures indicate that the directors will be able to recommend the payment of the same dividend and bonus as in recent years.

**Ruston & Hornsby Limited.**—The report of Ruston & Hornsby Limited for the year ended March 31 last contains a statement by the Chairman which draws attention to the great demand for the company's products evidenced by the fact that unexecuted orders alone amount to over £9,000,000. It is said that present indications make it appear that this demand will be sustained, although the Chairman points out that import controls in the company's many overseas markets and other factors may make their influence felt. It is proposed to make an issue of shares, details of which will be sent to shareholders provided Treasury consent is obtained. The company's new mechanised foundry in Lincoln is nearing completion and should be in production this year.

**Talks on Future of Leopoldina Railway.**—A statement has been issued by the directors of the Leopoldina Railway Co. Ltd., regarding the present position of negotiations regarding the future of the railway. They state that although two directors of the company visited Rio de Janeiro in compliance with indications received from the Brazilian Government, no information is available yet as to the

**THE FIRST PASSENGER RAILWAY.** By Charles E. Lee. A history of the Swansea & Mumbles Railway, which extends over 136 years. Cloth. 8½ in. by 5½ in. 91 pp. Illustrated. 5s. By post 5s. 3d.

**STATION DESIGN.** A striking example of modern British practice at the important wayside station of Luton. Reprinted from *The Railway Gazette*, July 7, 1944. Price 1s. Post free 1s. 2d.

**RAILWAY SIGNALLING AND COMMUNICATIONS, INSTALLATION AND MAINTENANCE.** A practical guide, especially intended to help Signal Inspectors, Installers, Fitters, Linemen, Draughtsmen, and all concerned with installing and maintaining Signal, Telegraph, and Telephone Equipment. 416 pp. Many illustrations. Cloth, 8s. By post 8s. 6d.

**RAILWAY MAINTENANCE PROBLEMS.** By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d.

action likely to be taken to overcome the difficulties now being experienced by the railway, in common with all other railways in Brazil. The fullest information was furnished to the Government by the directors, and a small committee has now been formed by the Brazilian Minister of Transport to study and report on the whole problem. The committee's terms of reference embrace consideration of the possibility and desirability of taking over the railway as a solution of the many difficulties which have been encountered.

**Finland to Supply Sleepers to Poland.**—Under the trade agreement concluded between Finland and Poland on July 1, Reuters reports, goods to the value of \$8,500,000 are to be exchanged between the two countries. Finland will supply Poland with paper, cellulose, railway sleepers, copper and turpentine oil in exchange for Polish coal, hardware, sugar and salt. The agreement will double the volume of trade between the two countries.

**Tour Over Croydon, Merstham & Godstone Iron Railway.**—Some twenty members of the British Railways, Southern Region, Lecture & Debating Society, took part in a tour over the course of the Croydon, Merstham & Godstone Iron Railway on July 10. After inspecting relics in the Rotary Field, Purley, the party, led by Messrs. R. A. Savill and W. G. Tharby, proceeded to the embankment near Chipstead Valley Road and thence to Hooley, noting the general route and traces of terracing. At Dean Lane, members were able to inspect the underside and construction of the overline bridge, and later walked to Merstham, where the quarry worked by the Greystone Lime Works was visited. At this point an unexpected pleasure awaited the members, as the stone sleepers and rails there, which previously had become overgrown, had been unearthed and assembled in the roadway, enabling a thorough inspection to be made.

**Mechanical Handling Exhibition.**—The Mechanical Handling Exhibition organised by *Mechanical Handling* was opened at Olympia, London, on July 12, and will remain open until July 21. The object of the exhibition, the first national display of its kind, is to show how increased production can be obtained by the proper use of mechanical handling equipment and the consequent elimination of uneconomical manhandling of goods. Every type of modern equipment is on view, including conveyors, trucks, lifting appliances, etc., and 130 firms are represented there. The exhibition was opened by Sir Stafford Cripps on Monday last, and other speakers



at the inaugural luncheon, referred to in an editorial article this week, were Sir Frederick Bain, President of the Federation of British Industries, and Sir John Anderson, President of the Dock & Harbour Authorities Association. On July 14, Mr. David Blee, Member of the Railway Executive, read a paper on the handling of railway freight, which also is referred to in our editorial article and will be dealt with more fully in a future issue. At this session of the conference, which was held on Wednesday afternoon, the chair was taken by Sir Eustace Missenden, Chairman of the Railway Executive.

#### Sir Cyril Hurcomb visits Acton Works.

—On Wednesday, July 14, Sir Cyril Hurcomb, Chairman of the British Transport Commission, visited the London Transport Acton Works, where he inspected the overhaul and maintenance methods of Underground rolling-stock.

**Valuation of Transport Securities.**—After considering the arguments and evidence submitted at the hearing on July 2 bearing on applications by the British Transport Commission, pursuant to Section 17 (3) of the Transport Act, 1947, the Transport Arbitration Tribunal has issued orders, dated July 9, 1948, determining the values of the following securities specified in Part II of the Fourth Schedule to the Act:—

Name of body by which security was issued	Nature of security	Value per £100 nominal £ s. d.
The Company of Proprietors of the Coventry Canal Navigation	Ordinary shares	160 0 0
The Weymouth & Portland Railway Company	4½ per cent. debenture stock	125 0 0
	4 per cent. debenture stock	112 10 0
	Consolidated stock	110 0 0

**Interest Warrants for British Transport Stock.**—The British Transport Commission has announced that holders of Transport stock representing some 800,000 stockholdings, have received the interest due to them on July 1. Many holders of railway stocks now converted into Transport stock have continued to receive their interest warrants from the registrars of the former companies, with the result that a holder of two or more railway stocks may have received as many separate warrants. It is intended to consolidate all stockholders' accounts at the Bank of England as soon as possible, but in view of the numbers involved, this will be a gradual process, and until it is completed, some stockholders may continue to receive more than one interest warrant on the same payment date. To attempt to transfer and consolidate all accounts at once would have involved the recruiting and training of very large numbers of additional staff, whose services would later become redundant.

#### Forthcoming Meetings

July 17-18.—Exhibition of locomotives and rolling stock at Doncaster Works, Kirk Street, Hexthorpe; 10 a.m. to 6 p.m.

July 21 (Wed.).—British Standards Institution, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2, at 3 p.m. Annual general meeting.

July 24 (Sat.).—British Railways, Southern Region, Lecture and Debating Society, visit to electrical control room, Three Bridges.

### Railway Stock Market

The Berlin and Palestine developments again kept Stock Exchange business down to its lowest post-war level. Other factors also made for caution, including the belief that high-grade coal, largely used by industry, will be increased in price before long. This would have a serious effect on production costs of a large range of products, and reduce profit margins unless their selling prices were increased.

The large net withdrawals from National Savings shown by last week's figures made for an easier tendency in the gilt-edged market, where the Nationalisation stocks were affected by implications of the first annual accounts of the National Coal Board. Reflecting the general trend, 3 per cent. Transport stock (1978-88) receded to 96½, while 3 per cent. Transport (1968-73), after recently changing hands up to close on 100½, eased to 100. There is still a fair amount of selling of the last-named stock, which was issued in exchange for wagons taken over under nationalisation, but in some quarters it is regarded as attractive as it is quoted ½ below 3 per cent. Electricity stock, which has the same maturity dates.

There has been a moderate revival of speculative activity in Brazil rail and utility securities. Great Western of Brazil shares have advanced to close on 80s. at the time of writing, while Leopoldina debentures firmed up to 60, although Leopoldina Terminal debentures receded to 58½; Leopoldina ordinary and preference moved narrowly around 9½ and 28½ respectively. San Paulo ordinary firmed up to 159. Antofagasta eased to 10½ and the preference stock to 61½, while, in other directions, Central Uruguay was 8½ and the second debentures 78, with stocks of the other Uruguayan railways steady, on hopes of a compromise agreement on "share-out" terms between ordinary and second debenture stockholders in Central Uruguay.

Manila "A" debentures eased to 92½

and the preference shares to 9s. 9d. Elsewhere, Dorada Railway stock slumped 10 points to 60, this being the latest instance where market rumours of "take-over" developments have met with denial. Moreover, the lower dividend has come as a surprise, and the directors forecast a further decline in results for the current year. United of Havana 1906 debentures eased to 15. In other directions, Beira Railway bearer shares were back to 50. Despite strike fears, Canadian Pacific at slightly over \$24 have rallied moderately at the time of writing.

There was a little selling of road transport shares which reacted moderately, including those of the operating companies. Scottish Motor Traction receded to 92s. East Kent were 120s., and National Omnibus 76s. 3d. The higher dividend declared by B.E.T. Omnibus, it is pointed out, is largely an inter-company transaction, as over 95 per cent. of the shares are held by B.E.T., the controlling company.

Iron and steel shares were unaffected by the industry's latest record production figures. North British Locomotive shares changed hands around 22s. 3d.; Vulcan Foundry were around 28s., while Birmingham Railway Carriage were 32s. 6d., and Wagon Repairs 5s. shares have been dealt in up to 21s. Charles Roberts marked £7½ and were inclined to respond to market hopes of a return of capital now that the company has received Transport stock for its wagons; but it is realised that the decision as to a re-arrangement of the capital might not be made until next year.

Babcock & Wilcox eased to 63s. 6d. but later attracted buyers in view of the yield of over 4½ per cent. T. W. Ward, after receding to 57s. 6d., also found buyers, the yield in this case being over 5½ per cent. Oil shares have turned easier with the general trend of markets, the Palestine news affecting sentiment. Such shares were influenced also to some extent by suggestions that if sanctions were imposed on the Arab countries, the latter might retaliate by withdrawing oil concessions.

#### Traffic Table of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffics for week		No. of week	Aggregate traffics to date	
				Total this year	Inc. or dec. compared with 1946/47		Total 1947/8	Increase or decrease
South & Central America	Antofagasta ...	834	4.7.48	£ 50,000	+ £ 11,710	26	£ 1,395,220	+ £ 328,410
	Bolivar ...	174	June, 1948	\$43,616	— \$66,369	26	\$442,327	— \$232,536
	Brazil ...	—	—	—	—	—	—	—
	Cent. Uruguay ...	970	5.7.48	33,726	— 3,142	1	14,454*	— 15,670
	Costa Rica ...	262	May., 1948	38,913	+ 2,930	48	349,643	+ 26,895
	Dorada ...	70	Mar., 1948	19,700	— 9,500	13	59,500	— 30,000
	G.W. of Brazil ...	1,030	3.7.48	20,600	— 7,300	26	901,200	+ 24,200
	Inter. Ctl. Amer. ...	794	May., 1948	\$1,184,569	+ \$34,136	22	\$5,997,252	+ \$96,473
	La Guaira ...	22½	June., 1948	\$116,312	+ \$4,691	26	\$640,293	+ \$44,089
	Leopoldina ...	1,918	3.7.48	56,538	— 20,325	26	1,382,217	+ 332,763
	Midland Uruguay ...	319	May, 1948	22,020	+ 3,724	48	208,409	+ 21,309
	Nitrato ...	382	30.6.48	13,567	+ 1,361	26	147,025	+ 32,725
	N.W. of Uruguay ...	113	May, 1948	5,699	— 1,561	48	60,982	+ 2,197
	Paraguay Cent. ...	274	25.6.48	£ 87,850	+ £ 4,381	51	£ 3,533,714	+ £ 227,188
	Peru Corp. ...	1,059	May., 1948	180,761	+ 22,005	48	1,907,324	+ 230,353
	Salvador ...	100	Apr., 1948	c175,000	+ c30,000	43	c1,796,600	+ c313,600
San Paulo ...	153½	—	—	—	—	—	—	
Taitai ...	156	June, 1948	8,770	+ 2,565	52	97,790	+ 46,870	
United of Havana ...	1,301	3.6.48	39,561	+ 28,791	1	16,764*	+ 25,445	
Uruguay Northern ...	73	May, 1948	1,850	— 1,615	48	13,995	+ 2,231	
Canada	Canadian National ...	23,535	May, 1948	10,286,250	+ 647,750	22	47,189,000	+ 3,476,750
	Canadian Pacific ...	17,037	May, 1948	7,051,250	+ 360,000	22	33,321,000	+ 2,231,000
Various	Barsi Light† ...	202	May., 1948	27,150	+ 4,575	8	57,877	+ 6,007
	Beira ...	204	Apr., 1948	105,518	+ 25,361	30	816,662	+ 192,556
	Egyptian Delta ...	607	10.5.48	19,082	+ 2,251	6	73,452	+ 6,340
	Gold Coast ...	536	May., 1948	233,674	+ 61,996	9	458,262	+ 122,632
	Manila ...	—	—	—	—	—	—	—
	Mid. of W. Australia ...	277	Apr., 1948	29,873	+ 9,898	43	239,345	+ 64,049
	Nigeria ...	1,900	Mar., 1948	401,873	+ 40,277	52	4,581,601*	+ 49,128
	Rhodesia ...	2,445	Sept., 1947	643,980	+ 102,833	52	6,787,603	+ 612,938
	South African ...	13,323	5.6.48	1,319,086	+ 18,156	10	12,422,124	+ 806,141
Victoria ...	4,774	Mar., 1948	1,466,914	+ 233,771	39	—	—	

† Receipts are calculated @ 1s. 6d. to the rupee \* Aggregate for 3 days